

# ALMANAC

## XXIV

# LUNAR ECLIPSES IN BCE

The almanac XXIV contains a list of lunar eclipses from the 3rd millennium BCE to the 1st millennium BCE, from the 30th century BCE to the 1st century BCE.

# 3RD MILLENNIUM BCE

In the 3rd millennium BCE the total number of lunar eclipses was 2 377 lunar eclipses: 848 penumbral lunar eclipses, 805 partial lunar eclipses, 724 total lunar eclipses (387 central total lunar eclipses, 337 non-central total lunar eclipses).

## 30TH CENTURY BCE

In the 30th century BCE the total number of lunar eclipses was 249 lunar eclipses: 89 penumbral lunar eclipses, 99 partial lunar eclipses, 61 total lunar eclipses (50 central total lunar eclipses, 11 non-central total lunar eclipses).

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-2999 Mar 16	06:15:57	73898	8970	-61828	-35	T+ pp	0.1832	2.5259	1.5178	342.6	219.7	94.6	12N	142W	
-2999 Sep 09	22:18:50	73883	8967	-61822	-30	T- pp	-0.0958	2.7125	1.6523	359.7	227.0	101.0	14S	25W	
-2998 Mar 05	19:13:48	73868	8964	-61816	-25	P a-	-0.5670	1.7983	0.8366	301.4	178.2	-	15N	24E	
-2998 Aug 29	23:57:40	73853	8961	-61810	-20	P t-	0.6232	1.7620	0.6679	346.9	182.4	-	17S	51W	
-2997 Jan 25	03:20:32	73840	8958	-61805	-53	N -a	1.3114	0.4359	-0.5327	172.0	-	-	25N	98W	

-2997 Feb 23	11:51:05	73838	8958	-61804	-15	N	a-	-1.2638	0.5139	-0.4361	182.7	-	-	17N	135E
-2997 Jul 20	08:38:32	73826	8955	-61799	-48	Ne	-t	-1.5522	0.0323	-1.0118	53.6	-	-	25S	177E
-2997 Aug 18	23:44:58	73823	8955	-61798	-10	N	t-	1.3109	0.4919	-0.5858	206.8	-	-	20S	48W
-2996 Jan 14	16:24:35	73811	8952	-61793	-43	P	-a	0.6497	1.6756	0.6565	312.6	169.3	-	25N	64E
-2996 Jul 08	17:59:56	73796	8949	-61787	-38	P	-a	-0.7479	1.4784	0.4930	292.5	147.9	-	24S	35E
-2995 Jan 02	22:26:36	73781	8946	-61781	-33	T-	pp	-0.0619	2.7832	1.7061	368.4	231.2	103.3	24N	28W
-2995 Jun 28	09:18:58	73766	8943	-61775	-28	T+	pp	0.0050	2.8225	1.8747	318.5	211.9	99.4	22S	165E
-2995 Dec 22	22:22:01	73751	8940	-61769	-23	P	t-	-0.7649	1.5054	0.4047	331.7	148.4	-	22N	28W
-2994 Jun 18	02:18:30	73736	8937	-61763	-18	P	a-	0.7367	1.4825	0.5298	282.5	148.4	-	20S	90W
-2994 Nov 12	07:07:51	73724	8934	-61758	-51	N	-h	1.4970	0.1347	-0.9116	106.2	-	-	12N	161W
-2994 Dec 11	23:03:34	73722	8934	-61757	-13	N	h-	-1.4171	0.2943	-0.7779	160.2	-	-	19N	39W
-2993 May 09	05:52:39	73709	8931	-61752	-46	N	-t	-1.1215	0.8109	-0.2102	245.9	-	-	10S	143W
-2993 Jun 07	16:19:35	73707	8931	-61751	-8	Nb	t-	1.5335	0.0421	-0.9535	58.3	-	-	17S	59E
-2993 Nov 01	18:00:14	73694	8928	-61746	-41	P	-a	0.7589	1.4617	0.4691	286.4	142.0	-	7N	36E
-2992 Apr 27	09:50:44	73679	8925	-61740	-36	T	-t	-0.3759	2.2000	1.1372	361.6	218.0	58.8	5S	159E
-2992 Oct 21	09:11:07	73665	8922	-61734	-31	T+	-p	0.0851	2.6878	1.7157	319.2	209.7	96.4	2N	169E
-2991 Apr 16	10:29:31	73650	8919	-61728	-26	T	t-	0.3900	2.1731	1.1124	359.4	216.0	53.5	0N	151E
-2991 Oct 11	00:03:00	73635	8916	-61722	-21	P	a-	-0.5936	1.7675	0.7701	305.7	174.4	-	3S	54W
-2990 Mar 07	04:41:16	73622	8914	-61717	-54	Ne	-h	-1.5281	0.0515	-0.9430	63.9	-	-	13N	119W
-2990 Apr 05	15:10:06	73620	8913	-61716	-16	N	h-	1.1307	0.7917	-0.2250	241.6	-	-	5N	82E
-2990 Aug 31	18:15:05	73608	8911	-61711	-49	Ne	-h	1.5727	0.0087	-1.0635	28.4	-	-	16S	34E
-2990 Sep 30	10:04:52	73605	8910	-61710	-11	N	h-	-1.3381	0.4289	-0.6227	186.3	-	-	8S	157E
-2989 Feb 24	19:01:53	73593	8908	-61705	-44	P	-a	-0.7525	1.4549	0.4994	279.9	144.2	-	17N	26E
-2989 Aug 20	18:41:00	73578	8905	-61699	-39	P	-t	0.9069	1.2409	0.1481	309.7	93.3	-	19S	27E
-2988 Feb 14	11:46:45	73563	8902	-61693	-34	T-	pp	-0.0381	2.7663	1.8095	320.0	211.9	98.9	20N	135E
-2988 Aug 08	19:28:44	73548	8899	-61687	-29	T+	pp	0.1777	2.5632	1.5011	362.5	227.0	96.0	22S	14E
-2987 Feb 03	02:13:14	73533	8895	-61681	-24	P	a-	0.7030	1.5681	0.5682	301.1	157.9	-	23N	82W
-2987 Jul 29	02:55:08	73519	8892	-61675	-19	P	a-	-0.5604	1.8314	0.8281	316.8	183.5	-	24S	98W
-2987 Dec 24	17:37:17	73506	8890	-61670	-52	N	-t	-1.4468	0.2491	-0.8417	151.7	-	-	21N	43E
-2986 Jan 23	10:14:57	73504	8889	-61669	-14	N	t-	1.4881	0.1575	-0.9020	118.2	-	-	25N	156E
-2986 Jun 19	09:32:31	73491	8887	-61664	-47	N	-a	1.2835	0.4742	-0.4690	175.9	-	-	20S	160E
-2986 Jul 18	17:02:16	73489	8886	-61663	-9	N	a-	-1.2449	0.5524	-0.4050	190.3	-	-	25S	49E
-2986 Dec 13	16:50:39	73476	8884	-61658	-42	P	-t	-0.7777	1.4810	0.3820	328.6	144.2	-	20N	53E
-2985 Jun 09	02:14:47	73462	8881	-61652	-37	P	-a	0.5763	1.7809	0.8199	302.0	177.8	-	18S	91W
-2985 Dec 02	19:01:10	73447	8878	-61646	-32	T-	pp	-0.0660	2.7661	1.7080	357.1	225.9	101.5	17N	20E
-2984 May 28	14:42:44	73432	8875	-61640	-27	T-	pp	-0.1887	2.5169	1.5066	345.0	220.9	94.6	16S	82E
-2984 Nov 21	04:25:00	73417	8872	-61634	-22	P	a-	0.6228	1.7166	0.7140	304.9	170.2	-	15N	122W
-2983 May 17	20:04:02	73402	8869	-61628	-17	P	t-	-0.9941	1.0628	0.0057	286.4	18.5	-	13S	2E
-2983 Oct 12	08:15:08	73390	8866	-61623	-50	N	-a	-1.4202	0.2392	-0.7350	128.8	-	-	3S	177W
-2983 Nov 10	19:00:51	73388	8866	-61622	-12	N	a-	1.2552	0.5412	-0.4317	187.8	-	-	11N	19E

-2982 Apr 07	06:43:50	73375	8863	-61617	-45	N	-t	1.0607	0.9381	-0.1141	270.6	-	-	4N	152W
-2982 Oct 01	22:13:52	73360	8860	-61611	-40	P	-a	-0.7959	1.4030	0.3924	289.7	134.1	-	7S	27W
-2981 Mar 27	13:19:27	73345	8857	-61605	-35	T+	pp	0.2534	2.3942	1.3919	338.6	215.7	86.4	8N	109E
-2981 Sep 21	06:18:18	73331	8854	-61599	-30	T-	pp	-0.1106	2.6883	1.6224	361.2	227.2	100.2	11S	148W
-2980 Mar 16	02:46:43	73316	8851	-61593	-25	P	a-	-0.5046	1.9104	0.9533	305.1	186.1	-	11N	92W
-2980 Sep 09	07:30:06	73301	8848	-61587	-20	P	t-	0.5982	1.8099	0.7118	350.1	187.1	-	14S	166W
-2979 Feb 04	11:25:26	73289	8845	-61582	-53	N	-a	1.3495	0.3654	-0.6020	158.8	-	-	23N	139E
-2979 Mar 05	19:36:48	73286	8845	-61581	-15	N	a-	-1.2115	0.6088	-0.3390	197.1	-	-	14N	16E
-2979 Aug 29	07:16:19	73271	8842	-61575	-10	N	t-	1.2775	0.5539	-0.5251	217.8	-	-	17S	163W
-2978 Jan 25	00:19:14	73259	8839	-61570	-43	P	-a	0.6825	1.6154	0.5963	310.2	163.5	-	24N	56W
-2978 Jul 20	01:35:01	73244	8836	-61564	-38	P	-a	-0.7984	1.3857	0.4004	285.4	134.7	-	25S	80W
-2977 Jan 14	06:05:02	73229	8833	-61558	-33	T-	pp	-0.0354	2.8313	1.7552	369.3	232.0	104.3	24N	144W
-2977 Jul 09	17:00:32	73215	8830	-61552	-28	T-	pp	-0.0530	2.7352	1.7858	318.2	211.3	98.6	24S	48E
-2976 Jan 03	05:59:16	73200	8827	-61546	-23	P	t-	-0.7443	1.5413	0.4441	333.8	154.5	-	23N	143W
-2976 Jun 28	09:49:17	73185	8824	-61540	-18	P	a-	0.6749	1.5979	0.6409	290.0	160.7	-	22S	155E
-2976 Nov 22	15:35:59	73173	8822	-61535	-51	N	-h	1.4906	0.1443	-0.8980	109.4	-	-	16N	69E
-2976 Dec 22	07:05:34	73170	8821	-61534	-13	N	h-	-1.4039	0.3159	-0.7510	164.9	-	-	21N	161W
-2975 May 19	12:32:37	73158	8819	-61529	-46	N	-t	-1.2059	0.6580	-0.3672	225.9	-	-	14S	114E
-2975 Jun 17	23:22:38	73155	8818	-61528	-8	N	t-	1.4695	0.1623	-0.8389	113.7	-	-	19S	49W
-2975 Nov 12	02:49:11	73143	8816	-61523	-41	P	-a	0.7539	1.4698	0.4796	286.2	143.1	-	11N	99W
-2974 May 08	16:06:06	73128	8813	-61517	-36	P	-t	-0.4652	2.0367	0.9726	356.4	208.3	-	9S	62E
-2974 Nov 01	18:04:57	73113	8810	-61511	-31	T+	-p	0.0830	2.6920	1.7192	319.4	209.8	96.5	7N	33E
-2973 Apr 27	16:49:23	73098	8807	-61505	-26	T	t-	0.3028	2.3317	1.2737	363.1	223.3	78.9	4S	52E
-2973 Oct 22	08:45:29	73084	8804	-61499	-21	P	a-	-0.5957	1.7656	0.7645	306.6	174.3	-	2N	173E
-2972 Apr 15	22:00:33	73069	8801	-61493	-16	N	h-	1.0515	0.9345	-0.0773	257.5	-	-	1N	24W
-2972 Oct 10	18:20:49	73054	8798	-61487	-11	N	h-	-1.3377	0.4320	-0.6246	187.7	-	-	4S	30E
-2971 Mar 07	02:45:01	73042	8795	-61482	-44	P	-a	-0.8056	1.3552	0.4038	272.7	131.4	-	14N	92W
-2971 Aug 31	02:04:36	73027	8792	-61476	-39	P	-t	0.9378	1.1858	0.0896	304.8	73.2	-	17S	86W
-2970 Feb 24	19:37:12	73012	8789	-61470	-34	T-	-p	-0.0878	2.6742	1.7190	319.9	211.6	97.8	18N	15E
-2970 Aug 20	02:58:17	72997	8786	-61464	-29	T+	pp	0.2140	2.4971	1.4342	360.5	224.7	91.6	20S	100W
-2969 Feb 14	09:56:07	72982	8783	-61458	-24	P	a-	0.6616	1.6440	0.6440	306.5	166.6	-	21N	160E
-2969 Aug 09	10:42:33	72968	8780	-61452	-19	P	a-	-0.5187	1.9079	0.9047	319.1	188.6	-	23S	144E
-2968 Jan 05	01:17:01	72955	8777	-61447	-52	N	-t	-1.4706	0.2048	-0.8846	138.3	-	-	22N	73W
-2968 Feb 03	17:40:17	72953	8777	-61446	-14	N	t-	1.4529	0.2220	-0.8370	139.9	-	-	24N	43E
-2968 Jun 29	17:09:30	72941	8774	-61441	-47	N	-a	1.3437	0.3650	-0.5804	156.0	-	-	21S	44E
-2968 Jul 29	00:57:25	72938	8774	-61440	-9	N	a-	-1.1981	0.6389	-0.3200	202.6	-	-	25S	71W
-2968 Dec 24	00:37:13	72926	8771	-61435	-42	P	-t	-0.7917	1.4534	0.3583	325.8	140.0	-	22N	65W
-2967 Jun 19	09:35:37	72911	8768	-61429	-37	P	-a	0.6470	1.6534	0.6879	296.8	166.9	-	20S	157E
-2967 Dec 13	03:15:30	72896	8765	-61423	-32	T-	pp	-0.0717	2.7532	1.7002	355.4	225.3	101.3	20N	106W
-2966 Jun 08	21:33:59	72882	8762	-61417	-27	T-	pp	-0.1115	2.6612	1.6456	348.5	224.2	100.6	19S	23W

-2966 Dec 02	13:05:58	72867	8759	-61411	-22	P	a-	0.6203	1.7190	0.7205	304.0	170.4	-	18N	106E
-2965 May 29	02:24:35	72852	8756	-61405	-17	P	t-	-0.9097	1.2193	0.1591	302.5	95.7	-	16S	96W
-2965 Oct 23	17:06:43	72840	8754	-61400	-50	N	-a	-1.4211	0.2385	-0.7377	128.8	-	-	1N	47E
-2965 Nov 22	03:54:42	72837	8753	-61399	-12	N	a-	1.2562	0.5388	-0.4331	187.3	-	-	15N	117W
-2964 Apr 17	13:12:14	72825	8751	-61394	-45	N	-t	1.1405	0.7897	-0.2584	251.1	-	-	0N	107E
-2964 Oct 12	06:47:39	72810	8748	-61388	-40	P	-a	-0.8011	1.3959	0.3806	290.4	132.7	-	2S	158W
-2963 Apr 06	20:21:01	72795	8745	-61382	-35	T	-p	0.3261	2.2581	1.2612	333.7	210.4	73.7	4N	0E
-2963 Oct 01	14:22:45	72781	8742	-61376	-30	T-	pp	-0.1205	2.6728	1.6016	362.6	227.3	99.6	6S	88E
-2962 Mar 27	10:14:19	72766	8739	-61370	-25	T	a-	-0.4371	2.0322	1.0792	308.6	193.2	41.4	7N	153E
-2962 Sep 20	15:10:26	72751	8736	-61364	-20	P	t-	0.5796	1.8457	0.7441	352.5	190.3	-	10S	76E
-2961 Feb 15	19:21:24	72739	8733	-61359	-53	N	-a	1.3946	0.2823	-0.6842	140.9	-	-	21N	18E
-2961 Mar 17	03:15:59	72736	8733	-61358	-15	N	a-	-1.1539	0.7137	-0.2326	211.3	-	-	10N	102W
-2961 Sep 09	14:57:15	72722	8730	-61352	-10	N	t-	1.2510	0.6030	-0.4769	225.7	-	-	14S	80E
-2960 Feb 05	08:03:46	72709	8727	-61347	-43	P	-a	0.7227	1.5416	0.5224	306.8	155.4	-	23N	173W
-2960 Jul 30	09:20:29	72694	8724	-61341	-38	P	-a	-0.8411	1.3073	0.3219	278.8	121.9	-	24S	162E
-2959 Jan 24	13:32:55	72680	8721	-61335	-33	T-	pp	-0.0010	2.8939	1.8190	370.1	232.7	104.9	24N	103E
-2959 Jul 20	00:49:13	72665	8718	-61329	-28	T-	pp	-0.1052	2.6405	1.6890	317.6	210.3	96.7	24S	71W
-2958 Jan 13	13:27:18	72650	8715	-61323	-23	P	t-	-0.7159	1.5915	0.4984	336.6	162.1	-	23N	103E
-2958 Jul 09	17:26:02	72635	8712	-61317	-18	P	a-	0.6186	1.7036	0.7420	296.5	170.4	-	23S	39E
-2958 Dec 04	00:00:23	72623	8710	-61312	-51	N	-h	1.4880	0.1466	-0.8909	109.8	-	-	19N	59W
-2957 Jan 02	14:59:05	72621	8709	-61311	-13	N	h-	-1.3827	0.3516	-0.7093	172.7	-	-	22N	79E
-2957 May 30	19:13:12	72608	8707	-61306	-46	N	-t	-1.2885	0.5089	-0.5209	202.5	-	-	17S	11E
-2957 Jun 29	06:30:54	72606	8706	-61305	-8	N	t-	1.4103	0.2740	-0.7332	147.0	-	-	21S	158W
-2957 Nov 23	11:36:51	72594	8704	-61300	-41	P	-a	0.7507	1.4741	0.4868	285.7	143.7	-	15N	127E
-2956 May 18	22:21:13	72579	8701	-61294	-36	P	-t	-0.5541	1.8745	0.8088	349.8	195.9	-	13S	35W
-2956 Nov 12	02:59:20	72564	8698	-61288	-31	T+	-p	0.0804	2.6968	1.7238	319.6	209.9	96.6	11N	104W
-2955 May 07	23:08:43	72549	8695	-61282	-26	T+	pp	0.2142	2.4931	1.4375	365.5	228.5	93.5	8S	46W
-2955 Nov 01	17:30:21	72535	8692	-61276	-21	P	a-	-0.6006	1.7580	0.7539	307.3	173.9	-	6N	39E
-2954 Apr 27	04:48:17	72520	8689	-61270	-16	P	h-	0.9688	1.0841	0.0768	271.7	64.0	-	3S	130W
-2954 Oct 22	02:41:15	72505	8686	-61264	-11	N	h-	-1.3419	0.4266	-0.6343	187.3	-	-	1N	98W
-2953 Mar 18	10:21:27	72493	8683	-61259	-44	P	-a	-0.8646	1.2452	0.2974	264.2	114.4	-	10N	151E
-2953 Sep 11	09:37:41	72478	8680	-61253	-39	P	-t	0.9610	1.1447	0.0457	301.0	52.6	-	13S	159E
-2952 Mar 07	03:20:55	72463	8677	-61247	-34	T-	-p	-0.1428	2.5728	1.6186	319.4	210.7	95.1	14N	104W
-2952 Aug 30	10:38:37	72449	8674	-61241	-29	T+	pp	0.2421	2.4457	1.3823	358.6	222.5	87.5	17S	143E
-2951 Feb 24	17:30:23	72434	8671	-61235	-24	P	a-	0.6140	1.7315	0.7313	312.2	175.6	-	18N	44E
-2951 Aug 19	18:38:54	72419	8668	-61229	-19	P	a-	-0.4836	1.9724	0.9690	320.7	192.3	-	21S	23E
-2950 Jan 15	08:48:29	72407	8666	-61224	-52	N	-t	-1.5001	0.1497	-0.9378	118.9	-	-	23N	172E
-2950 Feb 14	00:55:38	72404	8665	-61223	-14	N	t-	1.4103	0.2998	-0.7585	161.9	-	-	22N	67W
-2950 Jul 11	00:52:23	72392	8663	-61218	-47	N	-a	1.3988	0.2653	-0.6828	134.3	-	-	22S	73W
-2950 Aug 09	09:00:48	72390	8662	-61217	-9	N	a-	-1.1581	0.7132	-0.2475	212.3	-	-	24S	167E

-2949 Jan 04	08:15:53	72377	8660	-61212	-42	P	-t	-0.8121	1.4135	0.3231	321.9	133.4	-	23N	179E
-2949 Jun 30	17:02:08	72363	8657	-61206	-37	P	-a	0.7120	1.5367	0.5661	291.4	154.8	-	22S	43E
-2949 Dec 24	11:24:04	72348	8654	-61200	-32	T-	pp	-0.0825	2.7305	1.6832	353.6	224.6	100.8	22N	131E
-2948 Jun 19	04:28:43	72333	8651	-61194	-27	T-	pp	-0.0383	2.7984	1.7773	351.1	226.0	103.4	21S	129W
-2948 Dec 12	21:42:24	72318	8648	-61188	-22	P	a-	0.6138	1.7288	0.7346	303.4	171.3	-	21N	25W
-2947 Jun 08	08:48:03	72304	8645	-61182	-17	P	t-	-0.8280	1.3709	0.3072	316.2	130.4	-	19S	166E
-2947 Nov 03	01:59:12	72291	8642	-61177	-50	N	-a	-1.4216	0.2384	-0.7393	129.0	-	-	6N	89W
-2947 Dec 02	12:44:37	72289	8642	-61176	-12	N	a-	1.2542	0.5419	-0.4285	187.7	-	-	19N	109E
-2946 Apr 28	19:38:34	72277	8639	-61171	-45	N	-t	1.2223	0.6377	-0.4069	228.3	-	-	4S	7E
-2946 May 28	09:22:33	72274	8639	-61170	-7	Nb	t-	-1.5740	0.0020	-1.0614	13.7	-	-	17S	157E
-2946 Oct 23	15:24:26	72262	8636	-61165	-40	P	-a	-0.8032	1.3939	0.3746	291.4	132.1	-	2N	70E
-2945 Apr 18	03:20:07	72247	8633	-61159	-35	T	-t	0.4020	2.1164	1.1243	328.1	203.4	53.1	0S	108W
-2945 Oct 12	22:31:32	72233	8630	-61153	-30	T-	pp	-0.1262	2.6647	1.5889	364.0	227.6	99.2	2S	37W
-2944 Apr 06	17:38:08	72218	8627	-61147	-25	T	a-	-0.3658	2.1612	1.2117	311.7	199.2	65.0	3N	38E
-2944 Sep 30	22:58:52	72203	8624	-61141	-20	P	t-	0.5678	1.8689	0.7644	354.1	192.2	-	6S	43W
-2943 Feb 26	03:07:32	72191	8622	-61136	-53	N	-a	1.4471	0.1855	-0.7802	115.5	-	-	19N	100W
-2943 Mar 27	10:47:32	72188	8621	-61135	-15	N	a-	-1.0903	0.8297	-0.1154	225.3	-	-	6N	142E
-2943 Sep 19	22:48:26	72174	8618	-61129	-10	N	t-	1.2318	0.6383	-0.4421	231.0	-	-	10S	41W
-2942 Feb 15	15:37:11	72161	8616	-61124	-43	P	-a	0.7712	1.4526	0.4333	302.0	144.0	-	21N	72E
-2942 Aug 10	17:15:43	72147	8613	-61118	-38	P	-a	-0.8768	1.2421	0.2563	273.0	109.5	-	23S	42E
-2941 Feb 04	20:49:25	72132	8610	-61112	-33	T+	pp	0.0423	2.8173	1.7439	370.6	233.0	104.7	22N	7W
-2941 Jul 31	08:46:35	72117	8607	-61106	-28	T-	-p	-0.1503	2.5589	1.6049	316.8	208.9	93.9	24S	168E
-2940 Jan 24	20:47:37	72103	8604	-61100	-23	P	t-	-0.6806	1.6540	0.5653	340.0	170.7	-	23N	8W
-2940 Jul 20	01:08:01	72088	8601	-61094	-18	P	a-	0.5671	1.8007	0.8340	302.1	178.2	-	23S	78W
-2940 Dec 14	08:22:31	72076	8598	-61089	-51	N	-h	1.4882	0.1438	-0.8885	108.3	-	-	22N	174E
-2939 Jan 12	22:47:39	72073	8598	-61088	-13	N	h-	-1.3567	0.3962	-0.6584	181.8	-	-	23N	39W
-2939 Jun 10	01:54:49	72061	8595	-61083	-46	N	-t	-1.3690	0.3636	-0.6712	174.3	-	-	20S	92W
-2939 Jul 09	13:43:09	72059	8595	-61082	-8	N	t-	1.3546	0.3794	-0.6342	172.2	-	-	22S	92E
-2939 Dec 03	20:22:18	72046	8592	-61077	-41	P	-a	0.7498	1.4743	0.4902	284.9	143.9	-	19N	6W
-2938 May 30	04:37:21	72032	8589	-61071	-36	P	-t	-0.6415	1.7152	0.6473	341.8	180.3	-	16S	132W
-2938 Nov 23	11:51:58	72017	8586	-61065	-31	T+	-p	0.0793	2.6987	1.7260	319.8	210.0	96.7	15N	121E
-2937 May 19	05:31:31	72002	8583	-61059	-26	T+	pp	0.1278	2.6506	1.5968	366.7	231.6	101.7	12S	145W
-2937 Nov 13	02:13:22	71987	8580	-61053	-21	P	a-	-0.6047	1.7519	0.7453	308.0	173.6	-	10N	94W
-2936 May 07	11:39:24	71973	8577	-61047	-16	P	h-	0.8874	1.2315	0.2281	283.6	107.5	-	8S	124E
-2936 Nov 01	11:02:03	71958	8574	-61041	-11	N	t-	-1.3469	0.4192	-0.6452	186.5	-	-	5N	134E
-2935 Mar 28	17:52:21	71946	8572	-61036	-44	P	-a	-0.9285	1.1263	0.1817	254.2	90.8	-	6N	35E
-2935 Sep 21	17:19:18	71931	8569	-61030	-39	P	-t	0.9772	1.1161	0.0146	298.1	29.9	-	9S	41E
-2934 Mar 18	10:55:53	71916	8566	-61024	-34	T-	-p	-0.2049	2.4585	1.5050	318.5	208.9	90.3	10N	140E
-2934 Sep 10	18:29:48	71902	8563	-61018	-29	T+	-p	0.2621	2.4092	1.3456	356.9	220.7	84.2	14S	23E
-2933 Mar 08	00:53:05	71887	8560	-61012	-24	P	a-	0.5577	1.8350	0.8342	318.3	184.9	-	15N	69W

-2933 Aug 31	02:46:50	71872	8557	-61006	-19	T	a-	-0.4573	2.0206	1.0172	321.5	194.7	20.1	18S	101W
-2932 Jan 26	16:08:53	71860	8555	-61001	-52	N	-t	-1.5375	0.0799	-1.0054	87.5	-	-	22N	61E
-2932 Feb 25	07:59:44	71858	8554	-61000	-14	N	t-	1.3594	0.3928	-0.6649	184.2	-	-	19N	175W
-2932 Jul 21	08:42:14	71846	8552	-60995	-47	N	-a	1.4482	0.1761	-0.7751	110.4	-	-	23S	168E
-2932 Aug 19	17:12:57	71843	8551	-60994	-9	N	a-	-1.1251	0.7747	-0.1879	219.7	-	-	21S	42E
-2931 Jan 14	15:47:01	71831	8549	-60989	-42	P	-t	-0.8389	1.3617	0.2764	316.9	124.1	-	23N	65E
-2931 Jul 11	00:33:06	71816	8546	-60983	-37	P	-a	0.7724	1.4287	0.4526	285.8	141.2	-	23S	71W
-2930 Jan 03	19:26:30	71802	8543	-60977	-32	T-	pp	-0.0994	2.6962	1.6552	351.6	223.8	100.0	24N	9E
-2930 Jun 30	11:26:29	71787	8540	-60971	-27	T+	pp	0.0316	2.8138	1.7865	353.0	226.7	103.6	23S	125E
-2930 Dec 24	06:14:32	71772	8537	-60965	-22	P	a-	0.6031	1.7461	0.7567	303.1	172.8	-	23N	154W
-2929 Jun 19	15:15:10	71758	8534	-60959	-17	P	t-	-0.7491	1.5176	0.4501	328.0	154.7	-	22S	67E
-2929 Nov 14	10:51:46	71745	8531	-60954	-50	N	-a	-1.4222	0.2378	-0.7409	129.0	-	-	10N	135E
-2929 Dec 13	21:30:51	71743	8531	-60953	-12	N	a-	1.2492	0.5500	-0.4184	188.9	-	-	22N	25W
-2928 May 09	02:07:14	71731	8528	-60948	-45	N	-t	1.3029	0.4883	-0.5531	201.9	-	-	8S	94W
-2928 Jun 07	15:45:21	71728	8528	-60947	-7	N	t-	-1.4901	0.1558	-0.9075	120.4	-	-	20S	59E
-2928 Nov 03	00:02:51	71716	8525	-60942	-40	P	-a	-0.8035	1.3951	0.3724	292.5	132.2	-	7N	62W
-2927 Apr 28	10:18:43	71701	8522	-60936	-35	P	-h	0.4793	1.9724	0.9846	321.5	194.8	-	5S	144E
-2927 Oct 23	06:43:29	71687	8519	-60930	-30	T-	pp	-0.1286	2.6622	1.5826	365.3	228.0	99.1	3N	163W
-2926 Apr 18	00:59:29	71672	8516	-60924	-25	T	p-	-0.2920	2.2953	1.3486	314.2	204.2	79.5	1S	75W
-2926 Oct 12	06:52:07	71657	8513	-60918	-20	P	t-	0.5597	1.8848	0.7783	355.2	193.5	-	1S	165W
-2925 Mar 09	10:45:37	71645	8511	-60913	-53	Ne	-a	1.5058	0.0777	-0.8877	75.7	-	-	15N	143E
-2925 Apr 07	18:14:59	71643	8510	-60912	-15	P	a-	-1.0235	0.9522	0.0074	238.5	18.8	-	2N	26E
-2925 Oct 01	06:47:38	71628	8507	-60906	-10	N	h-	1.2184	0.6629	-0.4174	234.2	-	-	5S	163W
-2924 Feb 26	23:01:19	71616	8505	-60901	-43	P	-a	0.8265	1.3513	0.3317	295.7	128.3	-	18N	42W
-2924 Aug 21	01:20:16	71601	8502	-60895	-38	P	-a	-0.9058	1.1891	0.2029	268.0	97.9	-	21S	80W
-2923 Feb 15	03:55:37	71586	8499	-60889	-33	T+	pp	0.0936	2.7225	1.6506	370.6	232.7	103.1	20N	116W
-2923 Aug 10	16:52:28	71572	8496	-60883	-28	T-	-p	-0.1888	2.4898	1.5331	316.1	207.4	90.8	22S	46E
-2922 Feb 04	03:56:28	71557	8493	-60877	-23	P	t-	-0.6354	1.7344	0.6504	344.0	180.4	-	22N	117W
-2922 Jul 31	08:58:31	71543	8490	-60871	-18	P	a-	0.5231	1.8841	0.9120	306.8	184.2	-	23S	163E
-2922 Dec 25	16:38:11	71530	8488	-60866	-51	N	-h	1.4944	0.1294	-0.8971	102.4	-	-	24N	49E
-2921 Jan 24	06:26:49	71528	8487	-60865	-13	N	h-	-1.3218	0.4569	-0.5911	193.2	-	-	22N	155W
-2921 Jun 21	08:40:32	71516	8485	-60860	-46	N	-t	-1.4448	0.2274	-0.8128	140.2	-	-	23S	165E
-2921 Jul 20	21:02:47	71513	8484	-60859	-8	N	t-	1.3056	0.4727	-0.5476	191.4	-	-	23S	19W
-2921 Dec 15	05:02:38	71501	8482	-60854	-41	P	-a	0.7537	1.4651	0.4848	283.6	143.0	-	21N	138W
-2920 Jun 09	10:57:29	71486	8479	-60848	-36	P	-t	-0.7253	1.5626	0.4924	332.8	161.4	-	20S	130E
-2920 Dec 03	20:42:19	71472	8476	-60842	-31	T+	-p	0.0800	2.6971	1.7250	319.9	210.2	96.8	18N	14W
-2919 May 29	11:55:52	71457	8473	-60836	-26	T+	pp	0.0417	2.8077	1.7554	366.7	232.8	105.4	16S	116E
-2919 Nov 23	10:55:56	71443	8470	-60830	-21	P	a-	-0.6090	1.7448	0.7363	308.6	173.2	-	14N	133E
-2918 May 18	18:31:09	71428	8467	-60824	-16	P	a-	0.8050	1.3811	0.3809	293.9	135.4	-	12S	18E
-2918 Nov 12	19:22:45	71413	8464	-60818	-11	N	t-	-1.3526	0.4101	-0.6571	185.3	-	-	10N	6E

-2917 Apr 09	01:18:55	71401	8461	-60813	-44	P	-a	-0.9963	1.0007	0.0585	242.5	52.4	-	2N	80W
-2917 May 08	08:05:59	71399	8461	-60812	-6	Nb	a-	1.5022	0.0776	-0.8746	75.0	-	-	7S	175E
-2917 Oct 03	01:09:11	71386	8458	-60807	-39	Nx	-t	0.9871	1.0988	-0.0043	296.3	-	-	5S	80W
-2916 Mar 28	18:25:28	71372	8455	-60801	-34	T-	-p	-0.2710	2.3373	1.3838	317.0	206.1	82.6	6N	24E
-2916 Sep 21	02:29:20	71357	8453	-60795	-29	T	-p	0.2760	2.3835	1.3201	355.3	219.1	81.6	10S	99W
-2915 Mar 18	08:08:32	71343	8450	-60789	-24	P	h-	0.4965	1.9479	0.9462	324.4	193.7	-	11N	179E
-2915 Sep 10	11:03:14	71328	8447	-60783	-19	T	a-	-0.4375	2.0570	1.0536	321.8	196.2	35.0	14S	133E
-2914 Mar 07	14:53:27	71313	8444	-60777	-14	N	t-	1.3010	0.4998	-0.5574	206.2	-	-	15N	79E
-2914 Aug 01	16:40:06	71301	8441	-60772	-47	N	-a	1.4912	0.0990	-0.8557	83.5	-	-	22S	47E
-2914 Aug 31	01:33:56	71299	8441	-60771	-9	N	a-	-1.0995	0.8228	-0.1418	225.2	-	-	18S	85W
-2913 Jan 25	23:09:23	71287	8438	-60766	-42	P	-t	-0.8730	1.2965	0.2166	310.5	110.6	-	23N	47W
-2913 Jul 22	08:11:12	71272	8435	-60760	-37	P	-a	0.8261	1.3330	0.3511	280.3	126.6	-	23S	173E
-2912 Jan 15	03:21:30	71257	8432	-60754	-32	T-	pp	-0.1233	2.6491	1.6146	349.4	222.6	98.7	24N	111W
-2912 Jul 10	18:30:44	71243	8429	-60748	-27	T+	pp	0.0949	2.7008	1.6672	354.4	226.3	101.6	24S	17E
-2911 Jan 03	14:39:45	71228	8426	-60742	-22	P	a-	0.5862	1.7744	0.7901	303.4	175.2	-	24N	78E
-2911 Jun 29	21:47:22	71213	8423	-60736	-17	P	t-	-0.6745	1.6564	0.5849	337.8	172.8	-	23S	33W
-2911 Nov 24	19:42:18	71201	8421	-60731	-50	N	-a	-1.4242	0.2343	-0.7450	128.3	-	-	14N	0E
-2911 Dec 24	06:10:42	71199	8420	-60730	-12	N	a-	1.2396	0.5665	-0.3997	191.3	-	-	24N	156W
-2910 May 20	08:37:46	71187	8418	-60725	-45	N	-t	1.3821	0.3417	-0.6972	170.6	-	-	12S	165E
-2910 Jun 18	22:14:25	71184	8418	-60724	-7	N	t-	-1.4102	0.3025	-0.7611	165.2	-	-	22S	41W
-2910 Nov 14	08:39:39	71172	8415	-60719	-40	P	-a	-0.8043	1.3951	0.3696	293.6	132.1	-	11N	166E
-2909 May 09	17:18:26	71157	8412	-60713	-35	P	-h	0.5564	1.8290	0.8448	314.1	184.3	-	9S	36E
-2909 Nov 03	14:57:00	71143	8409	-60707	-30	T-	pp	-0.1286	2.6637	1.5811	366.6	228.5	99.2	7N	71E
-2908 Apr 28	08:18:55	71128	8406	-60701	-25	T-	p-	-0.2161	2.4334	1.4890	316.1	207.9	89.3	5S	171E
-2908 Oct 22	14:50:17	71114	8403	-60695	-20	P	t-	0.5556	1.8928	0.7851	355.7	194.1	-	3N	73E
-2907 Apr 18	01:37:20	71099	8400	-60689	-15	P	a-	-0.9529	1.0818	0.1368	251.1	79.5	-	2S	88W
-2907 Oct 11	14:54:48	71084	8397	-60683	-10	N	h-	1.2104	0.6773	-0.4024	235.8	-	-	1S	72E
-2906 Mar 09	06:13:45	71072	8395	-60678	-43	P	-h	0.8904	1.2344	0.2141	287.5	105.3	-	15N	152W
-2906 Sep 01	09:35:09	71058	8392	-60672	-38	P	-a	-0.9271	1.1502	0.1634	264.1	88.1	-	18S	154E
-2905 Feb 26	10:51:26	71043	8389	-60666	-33	T+	pp	0.1529	2.6129	1.5424	370.0	231.4	99.4	17N	138E
-2905 Aug 22	01:06:44	71028	8386	-60660	-28	T-	-p	-0.2202	2.4336	1.4740	315.4	205.9	87.5	20S	80W
-2904 Feb 15	10:58:05	71014	8383	-60654	-23	P	t-	-0.5839	1.8265	0.7473	348.1	190.0	-	20N	136E
-2904 Aug 10	16:55:54	70999	8380	-60648	-18	P	a-	0.4854	1.9560	0.9783	310.8	188.9	-	22S	42E
-2903 Jan 05	00:49:00	70987	8378	-60643	-51	N	-h	1.5051	0.1066	-0.9138	92.7	-	-	25N	75W
-2903 Feb 03	13:59:31	70985	8377	-60642	-13	N	h-	-1.2808	0.5287	-0.5125	205.5	-	-	21N	90E
-2903 Jul 01	15:29:02	70973	8375	-60637	-46	Ne	-t	-1.5170	0.0978	-0.9482	93.4	-	-	24S	61E
-2903 Jul 31	04:27:41	70970	8374	-60636	-8	N	t-	1.2614	0.5572	-0.4699	207.2	-	-	22S	132W
-2903 Dec 25	13:38:37	70958	8372	-60631	-41	P	-a	0.7618	1.4483	0.4721	281.8	141.1	-	23N	92E
-2902 Jun 20	17:22:14	70943	8369	-60625	-36	P	-t	-0.8049	1.4179	0.3449	322.8	138.3	-	22S	32E
-2902 Dec 15	05:26:45	70929	8366	-60619	-31	T+	-p	0.0855	2.6865	1.7154	320.0	210.3	96.7	21N	146W



-2901 Jun 09	18:27:15	70914	8363	-60613	-26	T-	pp	-0.0394	2.8116	1.7603	365.7	232.3	105.2	19S	16E
-2901 Dec 04	19:33:39	70900	8360	-60607	-21	P	a-	-0.6098	1.7442	0.7342	309.6	173.5	-	18N	1E
-2900 May 29	01:27:58	70885	8357	-60601	-16	P	a-	0.7255	1.5256	0.5281	302.4	155.3	-	15S	89W
-2900 Nov 23	03:40:14	70870	8354	-60595	-11	N	t-	-1.3563	0.4044	-0.6649	184.7	-	-	14N	121W

# 29TH CENTURY BCE

In the 29th century BCE the total number of lunar eclipses was 231 lunar eclipses: 84 penumbral lunar eclipses, 69 partial lunar eclipses, 78 total lunar eclipses (33 central total lunar eclipses, 45 non-central total lunar eclipses).

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-2899 Apr 19	08:42:46	70858	8352	-60590	-44	N	-a	-1.0667	0.8707	-0.0697	229.1	-	-	3S	165E
-2899 May 18	15:22:43	70856	8351	-60589	-6	N	a-	1.4265	0.2156	-0.7350	123.1	-	-	11S	63E
-2899 Oct 13	09:04:44	70844	8349	-60584	-39	Nx	-t	0.9922	1.0899	-0.0142	295.2	-	-	0S	159E
-2898 Apr 09	01:47:42	70829	8346	-60578	-34	T	-a	-0.3426	2.2062	1.2522	314.7	201.8	70.2	2N	90W
-2898 Oct 02	10:38:07	70815	8343	-60572	-29	Tm	-p	0.2830	2.3703	1.3077	353.9	218.1	80.1	6S	136E
-2897 Mar 29	15:14:59	70800	8340	-60566	-24	T	t-	0.4288	2.0729	1.0696	330.4	202.0	40.6	7N	70E
-2897 Sep 21	19:28:40	70786	8337	-60560	-19	T	a-	-0.4245	2.0806	1.0776	321.6	197.0	41.6	10S	4E
-2896 Mar 17	21:37:54	70771	8334	-60554	-14	N	t-	1.2355	0.6198	-0.4373	227.5	-	-	12N	25W
-2896 Aug 12	00:46:32	70759	8331	-60549	-47	Ne	-a	1.5273	0.0348	-0.9237	49.8	-	-	20S	76W
-2896 Sep 10	10:03:47	70756	8331	-60548	-9	N	a-	-1.0810	0.8577	-0.1089	229.0	-	-	15S	145E
-2895 Feb 05	06:22:52	70744	8328	-60543	-42	P	-t	-0.9147	1.2171	0.1429	302.5	90.6	-	21N	156W
-2895 Aug 01	15:55:28	70730	8326	-60537	-37	P	-a	0.8740	1.2484	0.2603	275.1	110.8	-	22S	56E
-2894 Jan 25	11:09:34	70715	8323	-60531	-32	T-	pp	-0.1538	2.5897	1.5620	346.9	221.2	96.6	23N	131E
-2894 Jul 22	01:40:56	70700	8320	-60525	-27	T+	pp	0.1523	2.5988	1.5585	355.2	225.2	98.0	24S	92W
-2893 Jan 14	22:58:07	70686	8317	-60519	-22	P	a-	0.5631	1.8141	0.8351	304.1	178.4	-	25N	47W
-2893 Jul 11	04:26:51	70671	8314	-60513	-17	P	t-	-0.6060	1.7843	0.7085	346.0	186.5	-	24S	134W

-2893	Dec 06	04:30:24	70659	8311	-60508	-50	N	-a	-1.4280	0.2274	-0.7520	126.7	-	-	17N	134W
-2892	Jan 04	14:45:18	70657	8311	-60507	-12	N	a-	1.2260	0.5903	-0.3735	194.8	-	-	25N	74E
-2892	May 30	15:12:37	70645	8308	-60502	-45	N	-t	1.4583	0.2008	-0.8359	132.0	-	-	15S	64E
-2892	Jun 29	04:50:12	70642	8308	-60501	-7	N	t-	-1.3345	0.4416	-0.6224	196.7	-	-	24S	141W
-2892	Nov 24	17:14:54	70630	8305	-60496	-40	P	-a	-0.8057	1.3936	0.3659	294.5	131.9	-	15N	35E
-2891	May 20	00:20:51	70616	8303	-60490	-35	P	-a	0.6321	1.6886	0.7074	305.9	172.1	-	12S	73W
-2891	Nov 13	23:09:26	70601	8300	-60484	-30	T-	pp	-0.1293	2.6636	1.5787	367.7	228.9	99.3	11N	54W
-2890	May 09	15:38:27	70587	8297	-60478	-25	T-	p-	-0.1396	2.5731	1.6301	317.4	210.5	95.5	9S	58E
-2890	Nov 02	22:50:20	70572	8294	-60472	-20	P	t-	0.5528	1.8982	0.7901	356.0	194.6	-	8N	50W
-2889	Apr 29	08:58:26	70557	8291	-60466	-15	P	a-	-0.8811	1.2140	0.2680	262.6	109.5	-	6S	159E
-2889	Oct 22	23:05:34	70543	8288	-60460	-10	N	h-	1.2044	0.6876	-0.3905	236.7	-	-	4N	53W
-2888	Mar 19	13:18:28	70531	8285	-60455	-43	P	-h	0.9597	1.1079	0.0866	277.2	68.4	-	11N	99E
-2888	Sep 11	17:58:56	70516	8282	-60449	-38	P	-a	-0.9421	1.1228	0.1357	261.1	80.4	-	14S	26E
-2887	Mar 08	17:36:32	70502	8279	-60443	-33	T+	pp	0.2205	2.4883	1.4191	368.6	228.8	92.3	14N	34E
-2887	Sep 01	09:29:39	70487	8277	-60437	-28	T-	-p	-0.2446	2.3902	1.4276	314.9	204.6	84.6	17S	153E
-2886	Feb 25	17:49:07	70473	8274	-60431	-23	P	t-	-0.5231	1.9357	0.8614	352.4	199.6	-	17N	31E
-2886	Aug 22	01:02:07	70458	8271	-60425	-18	T	p-	0.4555	2.0137	1.0304	314.1	192.4	26.2	19S	81W
-2885	Jan 16	08:50:51	70446	8268	-60420	-51	N	-h	1.5241	0.0686	-0.9453	74.3	-	-	25N	164E
-2885	Feb 14	21:22:41	70444	8268	-60419	-13	N	h-	-1.2307	0.6171	-0.4172	219.0	-	-	19N	23W
-2885	Aug 11	12:01:44	70429	8265	-60413	-8	N	t-	1.2252	0.6272	-0.4068	219.4	-	-	21S	113E
-2884	Jan 05	22:07:50	70417	8262	-60408	-41	P	-a	0.7763	1.4195	0.4476	279.2	137.7	-	25N	37W
-2884	Jun 30	23:52:25	70402	8259	-60402	-36	P	-t	-0.8800	1.2817	0.2057	312.0	109.1	-	24S	67W
-2884	Dec 25	14:06:14	70388	8257	-60396	-31	T+	-p	0.0952	2.6680	1.6983	320.1	210.4	96.5	23N	82E
-2883	Jun 20	01:03:54	70373	8254	-60390	-26	T-	pp	-0.1174	2.6681	1.6175	363.7	230.2	101.8	21S	86W
-2883	Dec 15	04:06:25	70359	8251	-60384	-21	P	a-	-0.6073	1.7492	0.7383	310.8	174.4	-	20N	129W
-2882	Jun 09	08:28:53	70344	8248	-60378	-16	P	a-	0.6481	1.6665	0.6712	309.4	170.5	-	18S	163E
-2882	Dec 04	11:54:16	70330	8245	-60372	-11	N	t-	-1.3578	0.4024	-0.6683	184.8	-	-	17N	114E
-2881	Apr 30	16:05:05	70318	8242	-60367	-44	N	-a	-1.1383	0.7388	-0.2005	213.8	-	-	7S	51E
-2881	May 29	22:42:18	70315	8242	-60366	-6	N	a-	1.3526	0.3506	-0.5988	154.7	-	-	15S	50W
-2881	Oct 24	17:04:32	70303	8239	-60361	-39	Nx	-t	0.9942	1.0864	-0.0179	294.6	-	-	4N	36E
-2880	Apr 19	09:07:07	70289	8237	-60355	-34	T	-a	-0.4160	2.0721	1.1169	311.7	196.1	50.0	2S	157E
-2880	Oct 12	18:53:28	70274	8234	-60349	-29	T	-p	0.2855	2.3651	1.3037	352.7	217.3	79.5	1S	9E
-2879	Apr 08	22:14:28	70260	8231	-60343	-24	T	p-	0.3562	2.2070	1.2018	336.0	209.5	66.6	3N	39W
-2879	Oct 02	04:01:14	70245	8228	-60337	-19	T	a-	-0.4167	2.0946	1.0922	321.2	197.2	45.1	6S	127W
-2878	Mar 29	04:14:23	70230	8225	-60331	-14	N	t-	1.1639	0.7513	-0.3059	247.9	-	-	8N	127W
-2878	Sep 21	18:40:35	70216	8222	-60325	-9	N	a-	-1.0682	0.8822	-0.0862	231.6	-	-	11S	14E
-2877	Feb 16	13:27:51	70204	8219	-60320	-42	P	-t	-0.9637	1.1243	0.0558	292.6	57.2	-	19N	95E
-2877	Aug 12	23:48:17	70189	8217	-60314	-37	P	-a	0.9140	1.1781	0.1837	270.5	94.4	-	21S	64W
-2876	Feb 05	18:50:23	70175	8214	-60308	-32	T-	pp	-0.1913	2.5175	1.4967	344.1	219.2	93.2	22N	14E
-2876	Aug 01	08:57:52	70160	8211	-60302	-27	T+	-p	0.2032	2.5089	1.4619	355.8	223.7	93.0	23S	158E

-2875	Jan 25	07:08:59	70146	8208	-60296	-22	P	a-	0.5334	1.8661	0.8923	305.3	182.3	-	24N	171W
-2875	Jul 21	11:14:28	70131	8205	-60290	-17	P	t-	-0.5444	1.8994	0.8193	352.6	196.9	-	24S	122E
-2875	Dec 16	13:12:04	70119	8202	-60285	-50	N	-a	-1.4371	0.2107	-0.7684	122.3	-	-	20N	94E
-2874	Jan 14	23:10:17	70117	8202	-60284	-12	N	a-	1.2049	0.6276	-0.3337	200.1	-	-	25N	53W
-2874	Jun 10	21:53:16	70105	8199	-60279	-45	Ne	-t	1.5305	0.0676	-0.9676	77.2	-	-	18S	39W
-2874	Jul 10	11:35:53	70102	8199	-60278	-7	N	t-	-1.2657	0.5684	-0.4965	220.1	-	-	25S	116E
-2874	Dec 06	01:45:00	70090	8197	-60273	-40	P	-a	-0.8106	1.3855	0.3562	295.0	130.7	-	18N	95W
-2873	May 31	07:27:30	70076	8194	-60267	-35	P	-a	0.7054	1.5529	0.5741	297.1	157.9	-	16S	178E
-2873	Nov 25	07:19:04	70061	8191	-60261	-30	T-	pp	-0.1316	2.6600	1.5737	368.6	229.3	99.3	15N	179W
-2872	May 19	22:59:12	70047	8188	-60255	-25	T-	pp	-0.0638	2.7118	1.7696	317.9	211.8	98.8	13S	55W
-2872	Nov 13	06:52:09	70032	8185	-60249	-20	P	t-	0.5512	1.9010	0.7933	355.9	194.8	-	12N	173W
-2871	May 09	16:15:24	70018	8182	-60243	-15	P	a-	-0.8064	1.3519	0.4043	273.4	132.0	-	10S	46E
-2871	Nov 02	07:21:38	70003	8179	-60237	-10	N	h-	1.2017	0.6913	-0.3846	236.5	-	-	8N	180E
-2870	Mar 30	20:13:42	69991	8177	-60232	-43	N	-t	1.0353	0.9698	-0.0530	264.2	-	-	7N	8W
-2870	Sep 23	02:31:07	69977	8174	-60226	-38	P	-a	-0.9511	1.1065	0.1193	259.0	75.4	-	10S	105W
-2869	Mar 20	00:13:19	69962	8171	-60220	-33	T	-t	0.2944	2.3521	1.2841	366.2	224.5	80.2	10N	68W
-2869	Sep 12	18:00:36	69948	8168	-60214	-28	T-	-p	-0.2623	2.3592	1.3938	314.6	203.6	82.1	14S	23E
-2868	Mar 08	00:34:32	69933	8165	-60208	-23	P	t-	-0.4569	2.0546	0.9851	356.4	208.4	-	14N	73W
-2868	Sep 01	09:14:26	69919	8162	-60202	-18	T	p-	0.4313	2.0611	1.0721	317.0	195.1	39.9	16S	154E
-2867	Jan 26	16:47:30	69907	8160	-60197	-51	Ne	-a	1.5480	0.0214	-0.9859	41.5	-	-	25N	44E
-2867	Feb 25	04:40:50	69904	8159	-60196	-13	N	a-	-1.1754	0.7153	-0.3123	232.4	-	-	16N	134W
-2867	Aug 21	19:42:22	69890	8156	-60190	-8	N	t-	1.1947	0.6865	-0.3543	229.3	-	-	19S	4W
-2866	Jan 16	06:29:30	69878	8154	-60185	-41	P	-a	0.7975	1.3783	0.4108	275.7	132.5	-	25N	163W
-2866	Jul 12	06:30:57	69863	8151	-60179	-36	P	-t	-0.9480	1.1586	0.0794	300.9	69.0	-	25S	168W
-2865	Jan 05	22:37:51	69849	8148	-60173	-31	T+	-p	0.1115	2.6373	1.6691	320.1	210.3	95.9	24N	47W
-2865	Jul 01	07:50:01	69834	8145	-60167	-26	T-	pp	-0.1883	2.5378	1.4875	361.1	227.1	95.6	23S	171E
-2865	Dec 26	12:31:07	69820	8142	-60161	-21	P	a-	-0.5987	1.7652	0.7537	312.6	176.2	-	22N	104E
-2864	Jun 19	15:37:54	69806	8139	-60155	-16	P	a-	0.5760	1.7979	0.8042	314.9	181.9	-	21S	53E
-2864	Dec 14	20:01:24	69791	8136	-60149	-11	N	t-	-1.3544	0.4089	-0.6625	186.7	-	-	20N	10W
-2863	May 10	23:26:04	69779	8134	-60144	-44	N	-a	-1.2111	0.6050	-0.3339	196.0	-	-	11S	63W
-2863	Jun 09	06:05:18	69777	8133	-60143	-6	N	a-	1.2808	0.4822	-0.4669	178.8	-	-	18S	163W
-2863	Nov 04	01:07:10	69765	8131	-60138	-39	Nx	-t	0.9941	1.0861	-0.0174	294.2	-	-	9N	87W
-2862	Apr 30	16:22:14	69750	8128	-60132	-34	P	-a	-0.4926	1.9325	0.9755	307.7	188.6	-	6S	44E
-2862	Oct 24	03:13:48	69736	8125	-60126	-29	T	-p	0.2848	2.3654	1.3060	351.4	216.8	79.6	3N	119W
-2861	Apr 20	05:08:00	69721	8122	-60120	-24	T	pp	0.2795	2.3490	1.3412	341.0	215.8	82.7	2S	146W
-2861	Oct 13	12:40:51	69707	8119	-60114	-19	T	a-	-0.4139	2.0992	1.0979	320.4	197.0	46.2	2S	100E
-2860	Apr 08	10:43:37	69692	8116	-60108	-14	N	t-	1.0867	0.8932	-0.1644	267.0	-	-	3N	132E
-2860	Oct 02	03:24:21	69678	8113	-60102	-9	N	a-	-1.0610	0.8961	-0.0739	233.0	-	-	7S	120W
-2859	Feb 26	20:25:11	69666	8111	-60097	-42	Nx	-t	-1.0193	1.0194	-0.0433	280.7	-	-	16N	11W
-2859	Aug 23	07:48:34	69651	8108	-60091	-37	P	-a	0.9470	1.1208	0.1201	266.7	77.2	-	18S	174E

-2858 Feb 16	02:22:55	69637	8105	-60085	-32	T-	pp	-0.2364	2.4313	1.4173	340.8	216.5	88.1	19N	101W
-2858 Aug 12	16:23:12	69622	8102	-60079	-27	T+	-p	0.2460	2.4336	1.3799	356.2	221.8	87.3	21S	45E
-2857 Feb 05	15:12:42	69608	8099	-60073	-22	P	a-	0.4973	1.9296	0.9611	306.8	186.5	-	22N	67E
-2857 Aug 01	18:10:24	69594	8097	-60067	-17	P	t-	-0.4897	2.0020	0.9175	357.9	204.8	-	24S	17E
-2857 Dec 27	21:48:07	69581	8094	-60062	-50	N	-a	-1.4504	0.1859	-0.7927	115.4	-	-	22N	36W
-2856 Jan 26	07:28:29	69579	8094	-60061	-12	N	a-	1.1787	0.6746	-0.2843	206.5	-	-	25N	178W
-2856 Jul 20	18:30:42	69565	8091	-60055	-7	N	t-	-1.2032	0.6835	-0.3823	238.2	-	-	25S	11E
-2856 Dec 16	10:10:06	69553	8088	-60050	-40	P	-a	-0.8190	1.3706	0.3401	294.9	128.4	-	20N	137E
-2855 Jun 10	14:38:16	69538	8085	-60044	-35	P	-a	0.7761	1.4223	0.4453	287.7	141.4	-	18S	67E
-2855 Dec 05	15:24:27	69524	8082	-60038	-30	T-	pp	-0.1368	2.6508	1.5638	369.4	229.6	99.0	19N	58E
-2854 May 31	06:22:37	69509	8080	-60032	-25	T+	pp	0.0101	2.8102	1.8680	317.9	212.0	99.6	16S	169W
-2854 Nov 24	14:50:40	69495	8077	-60026	-20	P	t-	0.5467	1.9084	0.8021	356.0	195.5	-	16N	65E
-2853 May 20	23:34:06	69480	8074	-60020	-15	P	a-	-0.7334	1.4870	0.5371	282.9	149.4	-	14S	67W
-2853 Nov 13	15:38:15	69466	8071	-60014	-10	N	a-	1.1991	0.6947	-0.3782	236.2	-	-	12N	53E
-2852 Apr 10	03:02:44	69454	8068	-60009	-43	N	-t	1.1149	0.8247	-0.1999	248.3	-	-	3N	114W
-2852 May 09	13:33:48	69452	8068	-60008	-5	Nb	t-	-1.5395	0.0306	-0.9643	49.8	-	-	11S	84E
-2852 Oct 03	11:09:35	69440	8066	-60003	-38	P	-a	-0.9556	1.0981	0.1110	257.7	72.6	-	6S	123E
-2851 Mar 30	06:42:02	69425	8063	-59997	-33	T	-t	0.3743	2.2051	1.1379	362.5	218.1	58.9	6N	168W
-2851 Sep 23	02:38:55	69411	8060	-59991	-28	T	-p	-0.2742	2.3388	1.3707	314.5	202.9	80.3	9S	109W
-2850 Mar 19	07:10:43	69396	8057	-59985	-23	T	t-	-0.3823	2.1893	1.1243	360.1	216.4	55.9	10N	175W
-2850 Sep 12	17:35:36	69382	8054	-59979	-18	T	p-	0.4149	2.0940	1.0995	319.4	197.0	46.6	13S	26E
-2849 Mar 08	11:51:17	69367	8051	-59973	-13	N	a-	-1.1122	0.8279	-0.1932	245.9	-	-	13N	116E
-2849 Sep 02	03:31:05	69353	8048	-59967	-8	N	t-	1.1714	0.7326	-0.3148	236.9	-	-	16S	123W
-2848 Jan 27	14:43:24	69341	8046	-59962	-41	P	-a	0.8258	1.3240	0.3611	271.3	125.0	-	24N	72E
-2848 Jul 22	13:17:56	69327	8043	-59956	-36	Nx	-t	-1.0091	1.0480	-0.0344	289.8	-	-	25S	88E
-2847 Jan 16	07:01:47	69312	8040	-59950	-31	T+	-p	0.1340	2.5953	1.6288	320.1	210.1	94.9	24N	174W
-2847 Jul 11	14:43:44	69298	8037	-59944	-26	T-	pp	-0.2540	2.4173	1.3669	357.9	223.0	86.8	24S	66E
-2846 Jan 05	20:48:30	69283	8034	-59938	-21	P	a-	-0.5849	1.7907	0.7789	314.8	178.9	-	23N	22W
-2846 Jun 30	22:53:51	69269	8031	-59932	-16	P	a-	0.5086	1.9211	0.9284	319.1	190.6	-	22S	57W
-2846 Dec 26	04:01:12	69254	8028	-59926	-11	N	t-	-1.3458	0.4248	-0.6467	190.5	-	-	22N	131W
-2845 May 22	06:48:43	69242	8026	-59921	-44	N	-a	-1.2827	0.4738	-0.4654	175.7	-	-	15S	176W
-2845 Jun 20	13:34:09	69240	8026	-59920	-6	N	a-	1.2132	0.6065	-0.3428	197.8	-	-	20S	82E
-2845 Nov 15	09:11:19	69228	8023	-59915	-39	Nx	-t	0.9934	1.0868	-0.0152	293.8	-	-	13N	149E
-2844 May 10	23:35:56	69214	8020	-59909	-34	P	-a	-0.5696	1.7924	0.8329	302.8	179.1	-	10S	67W
-2844 Nov 03	11:37:33	69199	8017	-59903	-29	T	-p	0.2821	2.3689	1.3122	350.2	216.4	80.0	8N	113E
-2843 Apr 30	11:57:45	69185	8014	-59897	-24	T+	pp	0.2005	2.4955	1.4847	345.3	220.8	93.5	6S	108E
-2843 Oct 23	21:24:15	69171	8012	-59891	-19	T	a-	-0.4139	2.0985	1.0986	319.4	196.6	46.3	3N	33W
-2842 Apr 19	17:07:43	69156	8009	-59885	-14	Nx	t-	1.0056	1.0424	-0.0161	284.7	-	-	1S	32E
-2842 Oct 13	12:12:56	69142	8006	-59879	-9	N	a-	-1.0580	0.9023	-0.0689	233.6	-	-	2S	105E
-2841 Mar 10	03:16:07	69130	8003	-59874	-42	N	-t	-1.0802	0.9048	-0.1523	266.6	-	-	12N	117W

-2841	Sep 03	15:56:06	69115	8000	-59868	-37	P	-a	0.9731	1.0759	0.0691	263.7	59.1	-	15S	50E
-2840	Feb 27	09:49:21	69101	7998	-59862	-32	T	-p	-0.2875	2.3342	1.3268	337.0	213.0	80.5	17N	146E
-2840	Aug 22	23:56:32	69086	7995	-59856	-27	T	-p	0.2813	2.3722	1.3120	356.6	220.1	81.3	19S	70W
-2839	Feb 15	23:07:22	69072	7992	-59850	-22	T	a-	0.4531	2.0081	1.0448	308.7	191.2	31.4	20N	54W
-2839	Aug 12	01:16:05	69058	7989	-59844	-17	T	t-	-0.4429	2.0901	1.0013	362.0	210.7	5.9	22S	91W
-2838	Jan 07	06:15:27	69046	7986	-59839	-50	N	-a	-1.4706	0.1485	-0.8292	103.7	-	-	22N	164W
-2838	Feb 05	15:36:30	69043	7986	-59838	-12	N	a-	1.1444	0.7362	-0.2203	214.4	-	-	23N	58E
-2838	Aug 01	01:37:11	69029	7983	-59832	-7	N	t-	-1.1489	0.7837	-0.2832	252.1	-	-	24S	97W
-2838	Dec 27	18:26:06	69017	7981	-59827	-40	P	-a	-0.8341	1.3432	0.3121	293.8	123.9	-	22N	12E
-2837	Jun 21	21:56:22	69003	7978	-59821	-35	P	-a	0.8416	1.3015	0.3257	278.1	122.7	-	21S	44W
-2837	Dec 16	23:24:07	68988	7975	-59815	-30	T-	pp	-0.1460	2.6339	1.5469	370.0	229.8	98.5	21N	64W
-2836	Jun 10	13:48:38	68974	7972	-59809	-25	T+	pp	0.0821	2.6785	1.7357	317.2	211.1	98.1	19S	77E
-2836	Dec 04	22:47:52	68959	7969	-59803	-20	P	t-	0.5410	1.9179	0.8139	356.0	196.4	-	19N	56W
-2835	May 31	06:52:08	68945	7966	-59797	-15	P	a-	-0.6605	1.6223	0.6693	291.5	163.7	-	17S	179W
-2835	Nov 23	23:55:25	68931	7963	-59791	-10	N	a-	1.1957	0.6991	-0.3702	236.0	-	-	16N	73W
-2834	Apr 21	09:44:52	68919	7961	-59786	-43	N	-t	1.1989	0.6717	-0.3553	228.5	-	-	2S	142E
-2834	May 20	20:28:00	68916	7961	-59785	-5	N	t-	-1.4677	0.1646	-0.8344	114.7	-	-	14S	23W
-2834	Oct 14	19:54:27	68904	7958	-59780	-38	P	-a	-0.9558	1.0976	0.1109	257.1	72.5	-	1S	11W
-2833	Apr 10	13:05:44	68890	7955	-59774	-33	P	-t	0.4581	2.0510	0.9844	357.4	209.2	-	2N	93E
-2833	Oct 04	11:22:28	68876	7952	-59768	-28	T	-p	-0.2818	2.3260	1.3554	314.5	202.5	79.1	5S	117E
-2832	Mar 29	13:43:56	68861	7950	-59762	-23	T	t-	-0.3043	2.3301	1.2695	362.9	222.9	78.3	6N	84E
-2832	Sep 23	02:02:21	68847	7947	-59756	-18	T	p-	0.4034	2.1175	1.1179	321.4	198.4	50.5	9S	103W
-2831	Mar 18	18:56:40	68833	7944	-59750	-13	N	a-	-1.0436	0.9506	-0.0642	258.9	-	-	9N	6E
-2831	Sep 12	11:26:39	68818	7941	-59744	-8	N	t-	1.1541	0.7675	-0.2862	242.8	-	-	12S	116E
-2830	Feb 06	22:49:22	68806	7938	-59739	-41	P	-a	0.8612	1.2570	0.2984	265.8	114.6	-	22N	51W
-2830	Aug 02	20:15:09	68792	7936	-59733	-36	N	-t	-1.0619	0.9527	-0.1329	279.2	-	-	24S	17W
-2829	Jan 27	15:16:08	68777	7933	-59727	-31	T+	-p	0.1643	2.5388	1.5738	319.8	209.6	93.0	23N	62E
-2829	Jul 22	21:49:18	68763	7930	-59721	-26	T	-p	-0.3110	2.3129	1.2623	354.5	218.5	76.1	24S	42W
-2828	Jan 17	04:56:15	68749	7927	-59715	-21	P	a-	-0.5637	1.8296	0.8177	317.6	182.7	-	23N	145W
-2828	Jul 11	06:18:35	68734	7924	-59709	-16	T	a-	0.4473	2.0333	1.0413	322.3	197.0	31.1	23S	170W
-2827	Jan 05	11:51:45	68720	7921	-59703	-11	N	t-	-1.3302	0.4531	-0.6181	196.7	-	-	23N	110E
-2827	Jun 01	14:13:10	68708	7919	-59698	-44	N	-a	-1.3531	0.3452	-0.5951	151.8	-	-	18S	70E
-2827	Jun 30	21:09:15	68706	7918	-59697	-6	N	a-	1.1499	0.7230	-0.2271	213.2	-	-	22S	34W
-2827	Nov 25	17:13:06	68694	7916	-59692	-39	Nx	-t	0.9948	1.0829	-0.0166	292.8	-	-	17N	26E
-2826	May 22	06:48:29	68679	7913	-59686	-34	P	-a	-0.6469	1.6523	0.6894	297.0	167.3	-	14S	179W
-2826	Nov 14	20:02:51	68665	7910	-59680	-29	T	-p	0.2792	2.3725	1.3192	348.9	216.1	80.5	12N	16W
-2825	May 11	18:44:25	68651	7907	-59674	-24	T+	pp	0.1200	2.6451	1.6306	348.8	224.4	100.3	10S	3E
-2825	Nov 04	06:10:29	68636	7904	-59668	-19	T	a-	-0.4155	2.0944	1.0967	318.3	196.0	45.8	7N	168W
-2824	Apr 29	23:27:35	68622	7902	-59662	-14	P	t-	0.9211	1.1980	0.1382	300.8	89.6	-	5S	66W
-2824	Oct 23	21:06:06	68608	7899	-59656	-9	N	a-	-1.0587	0.9012	-0.0707	233.5	-	-	2N	31W

-2823	Mar 20	09:59:18	68596	7896	-59651	-42	N	-t	-1.1479	0.7778	-0.2738	249.4	-	-	9N	140E
-2823	Sep 14	00:11:13	68581	7893	-59645	-37	P	-a	0.9924	1.0435	0.0307	261.8	39.8	-	12S	76W
-2822	Mar 09	17:08:46	68567	7891	-59639	-32	T	-p	-0.3455	2.2245	1.2236	332.6	208.3	68.9	13N	33E
-2822	Sep 03	07:37:46	68553	7888	-59633	-27	T	-p	0.3094	2.3239	1.2573	357.1	218.4	75.4	16S	172E
-2821	Feb 27	06:55:32	68538	7885	-59627	-22	T	a-	0.4028	2.0979	1.1394	310.7	195.9	53.9	17N	173W
-2821	Aug 23	08:31:20	68524	7882	-59621	-17	T	t-	-0.4038	2.1638	1.0710	365.3	215.0	43.2	20S	159E
-2820	Jan 18	14:35:58	68512	7880	-59616	-50	N	-a	-1.4960	0.1014	-0.8755	86.2	-	-	22N	70E
-2820	Feb 16	23:37:46	68510	7879	-59615	-12	N	a-	1.1049	0.8075	-0.1468	223.1	-	-	21N	64W
-2820	Aug 11	08:52:46	68495	7876	-59609	-7	N	t-	-1.1010	0.8720	-0.1959	263.0	-	-	23S	153E
-2819	Jan 07	02:34:56	68483	7874	-59604	-40	P	-a	-0.8543	1.3064	0.2750	291.9	117.3	-	23N	111W
-2819	Jul 02	05:21:15	68469	7871	-59598	-35	P	-a	0.9021	1.1903	0.2150	268.4	101.0	-	22S	157W
-2819	Dec 27	07:15:04	68455	7868	-59592	-30	T-	pp	-0.1617	2.6048	1.5184	370.3	229.7	97.4	23N	177E
-2818	Jun 21	21:20:23	68440	7865	-59586	-25	T+	-p	0.1494	2.5557	1.6116	316.1	209.4	94.5	21S	38W
-2818	Dec 16	06:38:43	68426	7862	-59580	-20	P	t-	0.5301	1.9362	0.8352	356.3	198.1	-	22N	175W
-2817	Jun 11	14:13:55	68412	7860	-59574	-15	P	a-	-0.5911	1.7515	0.7949	298.9	175.1	-	20S	68E
-2817	Dec 05	08:09:00	68397	7857	-59568	-10	N	a-	1.1888	0.7094	-0.3554	236.6	-	-	20N	161E
-2816	May 01	16:23:55	68385	7854	-59563	-43	N	-t	1.2840	0.5171	-0.5127	204.3	-	-	6S	39E
-2816	May 31	03:23:15	68383	7854	-59562	-5	N	t-	-1.3974	0.2958	-0.7079	152.6	-	-	18S	129W
-2816	Oct 25	04:42:48	68371	7851	-59557	-38	P	-a	-0.9538	1.1007	0.1151	256.8	73.6	-	3N	146W
-2815	Apr 20	19:22:46	68357	7849	-59551	-33	P	-t	0.5468	1.8883	0.8218	350.6	197.1	-	2S	5W
-2815	Oct 14	20:11:29	68343	7846	-59545	-28	T	-p	-0.2849	2.3213	1.3488	314.8	202.3	78.5	1S	18W
-2814	Apr 09	20:11:15	68328	7843	-59539	-23	T-	pp	-0.2209	2.4812	1.4246	365.0	227.9	92.5	2N	16W
-2814	Oct 04	10:35:16	68314	7840	-59533	-18	T	p-	0.3979	2.1300	1.1256	323.0	199.3	52.1	4S	126E
-2813	Mar 30	01:57:13	68300	7837	-59527	-13	P	a-	-0.9699	1.0830	0.0740	271.2	62.7	-	5N	102W
-2813	Sep 23	19:30:02	68285	7834	-59521	-8	N	t-	1.1440	0.7889	-0.2707	246.7	-	-	8S	8W
-2812	Feb 18	06:47:36	68273	7832	-59516	-41	P	-a	0.9034	1.1775	0.2231	259.0	100.0	-	20N	172W
-2812	Aug 13	03:21:24	68259	7829	-59510	-36	N	-t	-1.1074	0.8709	-0.2179	269.3	-	-	22S	125W
-2811	Feb 06	23:22:26	68245	7826	-59504	-31	T+	-p	0.2011	2.4706	1.5071	319.3	208.6	90.1	22N	61W
-2811	Aug 02	05:04:53	68230	7823	-59498	-26	T	-p	-0.3607	2.2219	1.1709	351.0	213.7	63.2	23S	152W
-2810	Jan 27	12:53:49	68216	7820	-59492	-21	P	a-	-0.5351	1.8822	0.8704	321.0	187.4	-	23N	95E
-2810	Jul 22	13:52:48	68202	7818	-59486	-16	T	a-	0.3928	2.1330	1.1413	324.5	201.7	55.6	24S	75E
-2809	Jan 16	19:33:11	68188	7815	-59480	-11	N	t-	-1.3079	0.4938	-0.5767	205.1	-	-	23N	6W
-2809	Jun 12	21:41:07	68176	7812	-59475	-44	N	-a	-1.4203	0.2226	-0.7193	123.4	-	-	21S	45W
-2809	Jul 12	04:51:01	68173	7812	-59474	-6	N	a-	1.0918	0.8302	-0.1213	225.7	-	-	23S	151W
-2809	Dec 07	01:12:40	68161	7809	-59469	-39	Nx	-t	0.9983	1.0748	-0.0215	291.3	-	-	20N	95W
-2808	Jun 01	14:02:18	68147	7807	-59463	-34	P	-a	-0.7223	1.5158	0.5492	290.3	153.1	-	18S	70E
-2808	Nov 25	04:27:48	68133	7804	-59457	-29	T	-p	0.2772	2.3741	1.3248	347.5	215.7	80.9	16N	144W
-2807	May 22	01:28:47	68118	7801	-59451	-24	T+	pp	0.0388	2.7962	1.7776	351.5	226.5	103.7	14S	101W
-2807	Nov 14	14:57:21	68104	7798	-59445	-19	T	a-	-0.4173	2.0899	1.0947	317.2	195.5	45.3	12N	58E
-2806	May 11	05:46:02	68090	7795	-59439	-14	P	t-	0.8357	1.3555	0.2940	315.0	127.9	-	9S	164W

-2806 Nov 04	05:59:44	68076	7792	-59433	-9	N	a-	-1.0601	0.8988	-0.0735	233.3	-	-	7N	167W
-2805 Mar 31	16:39:05	68064	7790	-59428	-42	N	-t	-1.2187	0.6454	-0.4012	229.3	-	-	4N	36E
-2805 Sep 25	08:32:34	68049	7787	-59422	-37	P	-a	1.0059	1.0216	0.0032	260.8	12.9	-	8S	156E
-2804 Mar 20	00:23:17	68035	7784	-59416	-32	T	-p	-0.4083	2.1062	1.1113	327.4	202.3	50.3	9N	79W
-2804 Sep 13	15:26:06	68021	7781	-59410	-27	T	-p	0.3307	2.2878	1.2154	357.7	217.1	70.1	12S	53E
-2803 Mar 09	14:36:14	68007	7779	-59404	-22	T	p-	0.3459	2.2001	1.2459	312.7	200.4	69.1	14N	69E
-2803 Sep 02	15:56:55	67992	7776	-59398	-17	T	t-	-0.3735	2.2214	1.1248	367.6	218.0	56.2	17S	45E
-2802 Jan 28	22:44:59	67980	7773	-59393	-50	Ne	-a	-1.5299	0.0387	-0.9373	53.7	-	-	21N	54W
-2802 Feb 27	07:28:15	67978	7773	-59392	-12	N	a-	1.0573	0.8941	-0.0584	232.8	-	-	18N	176E
-2802 Aug 22	16:21:21	67964	7770	-59386	-7	N	t-	-1.0629	0.9424	-0.1265	270.8	-	-	20S	39E
-2801 Jan 18	10:32:57	67952	7768	-59381	-40	P	-a	-0.8819	1.2557	0.2241	288.8	107.1	-	23N	128E
-2801 Jul 13	12:54:30	67938	7765	-59375	-35	P	-a	0.9563	1.0907	0.1156	259.0	74.9	-	23S	88E
-2800 Jan 07	14:57:39	67923	7762	-59369	-30	T-	pp	-0.1835	2.5642	1.4790	370.2	229.3	95.5	24N	61E
-2800 Jul 02	04:57:17	67909	7759	-59363	-25	T+	-p	0.2121	2.4416	1.4956	314.6	206.9	89.1	23S	154W
-2800 Dec 26	14:24:14	67895	7756	-59357	-20	P	t-	0.5144	1.9632	0.8659	356.9	200.4	-	23N	67E

# 28TH CENTURY BCE

**In the 28th century BCE the total number of lunar eclipses was 224 lunar eclipses: 82 penumbral lunar eclipses, 58 partial lunar eclipses, 84 total lunar eclipses (21 central total lunar eclipses, 63 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-2799 Jun 21	21:37:15	67881	7753	-59351	-15	P	a-	-0.5236	1.8775	0.9166	305.5	184.5	-	22S	45W
-2799 Dec 15	16:20:06	67866	7751	-59345	-10	N	a-	1.1790	0.7248	-0.3348	237.8	-	-	22N	37E
-2798 May 12	22:59:28	67854	7748	-59340	-43	N	-t	1.3704	0.3603	-0.6730	173.8	-	-	9S	63W
-2798 Jun 11	10:19:21	67852	7748	-59339	-5	N	t-	-1.3284	0.4251	-0.5838	181.6	-	-	21S	124E
-2798 Nov 05	13:33:20	67840	7745	-59334	-38	P	-a	-0.9505	1.1059	0.1217	256.7	75.5	-	8N	79E

-2797 May 02	01:38:29	67826	7742	-59328	-33	P	-t	0.6360	1.7247	0.6580	342.4	181.6	-	6S	102W
-2797 Oct 26	05:03:45	67812	7740	-59322	-28	T	-p	-0.2850	2.3220	1.3478	315.1	202.4	78.4	4N	154W
-2796 Apr 20	02:37:21	67797	7737	-59316	-23	T-	pp	-0.1356	2.6358	1.5829	366.0	231.1	101.1	2S	116W
-2796 Oct 14	19:11:51	67783	7734	-59310	-18	T	p-	0.3961	2.1357	1.1268	324.5	199.8	52.5	0N	6W
-2795 Apr 09	08:55:28	67769	7731	-59304	-13	P	a-	-0.8930	1.2213	0.2177	282.2	105.0	-	1N	150E
-2795 Oct 04	03:38:13	67755	7728	-59298	-8	N	t-	1.1382	0.8023	-0.2625	249.4	-	-	4S	132W
-2794 Feb 28	14:37:33	67743	7726	-59293	-41	P	-a	0.9528	1.0847	0.1342	250.7	78.5	-	17N	68E
-2794 Aug 24	10:39:07	67728	7723	-59287	-36	N	-t	-1.1439	0.8054	-0.2863	260.7	-	-	20S	124E
-2793 Feb 18	07:19:25	67714	7720	-59281	-31	T+	-p	0.2456	2.3883	1.4261	318.4	206.9	85.4	19N	177E
-2793 Aug 13	12:31:29	67700	7717	-59275	-26	T	-p	-0.4024	2.1456	1.0943	347.6	209.1	48.0	22S	95E
-2792 Feb 07	20:40:45	67686	7715	-59269	-21	P	a-	-0.4982	1.9498	0.9379	324.9	192.8	-	21N	24W
-2792 Aug 01	21:36:53	67671	7712	-59263	-16	T	a-	0.3455	2.2198	1.2281	325.9	205.1	68.4	23S	43W
-2791 Jan 27	03:02:16	67657	7709	-59257	-11	N	t-	-1.2762	0.5514	-0.5181	216.0	-	-	22N	120W
-2791 Jun 23	05:12:42	67645	7706	-59252	-44	N	-a	-1.4845	0.1060	-0.8383	86.1	-	-	23S	159W
-2791 Jul 22	12:40:36	67643	7706	-59251	-6	N	a-	1.0400	0.9263	-0.0270	235.9	-	-	23S	91E
-2791 Dec 17	09:06:38	67631	7704	-59246	-39	Nx	-t	1.0068	1.0572	-0.0350	288.7	-	-	22N	145E
-2790 Jun 12	21:17:49	67617	7701	-59240	-34	P	-a	-0.7954	1.3840	0.4128	282.9	136.0	-	21S	41W
-2790 Dec 06	12:49:29	67603	7698	-59234	-29	T	-p	0.2789	2.3687	1.3242	345.9	215.1	80.6	19N	88E
-2789 Jun 02	08:13:45	67588	7695	-59228	-24	T-	pp	-0.0411	2.7944	1.7710	353.2	227.1	103.8	17S	155E
-2789 Nov 25	23:44:16	67574	7692	-59222	-19	T	a-	-0.4184	2.0863	1.0943	316.2	195.1	45.1	15N	76W
-2788 May 21	12:02:20	67560	7689	-59216	-14	P	t-	0.7486	1.5164	0.4528	327.8	155.2	-	13S	99E
-2788 Nov 14	14:55:10	67546	7687	-59210	-9	N	a-	-1.0631	0.8932	-0.0789	232.7	-	-	11N	57E
-2787 Apr 10	23:14:22	67534	7684	-59205	-42	N	-t	-1.2936	0.5055	-0.5363	204.8	-	-	0N	66W
-2787 May 10	12:43:02	67531	7684	-59204	-4	N	t-	1.4957	0.1437	-0.9158	115.5	-	-	9S	90E
-2787 Oct 05	16:59:42	67520	7681	-59199	-37	Nx	-a	1.0138	1.0098	-0.0138	260.7	-	-	3S	26E
-2786 Mar 31	07:32:54	67505	7679	-59193	-32	P	-h	-0.4761	1.9790	0.9897	321.3	194.7	-	5N	171E
-2786 Sep 24	23:21:48	67491	7676	-59187	-27	T	-p	0.3450	2.2641	1.1863	358.5	216.3	66.0	8S	69W
-2785 Mar 20	22:12:17	67477	7673	-59181	-22	T	p-	0.2848	2.3102	1.3600	314.5	204.3	80.3	10N	48W
-2785 Sep 13	23:30:00	67463	7670	-59175	-17	T	p-	-0.3493	2.2674	1.1676	369.4	220.2	64.2	13S	70W
-2784 Mar 09	15:13:08	67448	7667	-59169	-12	P	a-	1.0053	0.9888	0.0377	242.6	42.3	-	14N	58E
-2784 Sep 01	23:59:15	67434	7664	-59163	-7	Nx	t-	-1.0317	1.0001	-0.0695	276.6	-	-	17S	77W
-2783 Jan 28	18:20:59	67422	7662	-59158	-40	P	-a	-0.9171	1.1913	0.1597	284.2	91.5	-	22N	10E
-2783 Jul 23	20:36:17	67408	7659	-59152	-35	P	-a	1.0043	1.0028	0.0275	250.0	36.9	-	23S	29W
-2782 Jan 17	22:29:44	67394	7656	-59146	-30	T-	pp	-0.2134	2.5087	1.4250	369.8	228.3	92.2	24N	54W
-2782 Jul 13	12:41:51	67380	7654	-59140	-25	T+	-p	0.2687	2.3389	1.3907	312.8	203.9	82.3	24S	89E
-2781 Jan 06	22:00:35	67366	7651	-59134	-20	P	t-	0.4909	2.0042	0.9112	357.8	203.7	-	24N	48W
-2781 Jul 03	05:07:15	67351	7648	-59128	-15	T	a-	-0.4623	1.9925	1.0268	311.0	191.8	24.7	24S	159W
-2781 Dec 27	00:25:23	67337	7645	-59122	-10	N	a-	1.1638	0.7498	-0.3041	240.2	-	-	24N	85W
-2780 May 23	05:33:50	67325	7643	-59117	-43	N	-t	1.4563	0.2047	-0.8325	133.4	-	-	13S	165W
-2780 Jun 21	17:18:09	67323	7642	-59116	-5	N	t-	-1.2623	0.5493	-0.4653	205.0	-	-	23S	18E



-2780	Nov 15	22:24:19	67311	7640	-59111	-38	P	-a	-0.9475	1.1104	0.1282	256.6	77.3	-	12N	57W
-2779	May 12	07:51:53	67297	7637	-59105	-33	P	-t	0.7262	1.5594	0.4920	332.4	161.4	-	10S	161E
-2779	Nov 05	13:57:36	67283	7634	-59099	-28	T	-p	-0.2839	2.3246	1.3493	315.5	202.6	78.6	8N	70E
-2778	May 01	09:01:31	67268	7631	-59093	-23	T-	pp	-0.0479	2.7951	1.7454	365.9	232.5	105.2	6S	144E
-2778	Oct 26	03:52:05	67254	7629	-59087	-18	T	p-	0.3981	2.1339	1.1214	325.6	200.0	51.5	5N	139W
-2777	Apr 20	15:51:39	67240	7626	-59081	-13	P	a-	-0.8130	1.3656	0.3669	292.2	132.9	-	3S	43E
-2777	Oct 15	11:50:53	67226	7623	-59075	-8	N	t-	1.1367	0.8074	-0.2621	251.1	-	-	1N	102E
-2776	Mar 10	22:21:00	67214	7621	-59070	-41	P	-a	1.0081	0.9817	0.0345	240.8	40.3	-	14N	50W
-2776	Apr 09	05:33:11	67212	7620	-59069	-3	Nb	a-	-1.5072	0.0688	-0.8842	70.6	-	-	1N	162W
-2776	Sep 03	18:06:26	67200	7618	-59064	-36	N	-t	-1.1729	0.7535	-0.3408	253.4	-	-	17S	10E
-2775	Feb 28	15:06:48	67186	7615	-59058	-31	T	-p	0.2976	2.2923	1.3311	317.0	204.4	78.1	16N	58E
-2775	Aug 23	20:08:56	67172	7612	-59052	-26	T	-p	-0.4360	2.0840	1.0324	344.5	204.9	28.6	19S	21W
-2774	Feb 18	04:17:22	67157	7609	-59046	-21	T	a-	-0.4539	2.0313	1.0192	329.2	198.7	21.6	19N	140W
-2774	Aug 13	05:30:48	67143	7606	-59040	-16	T	p-	0.3057	2.2930	1.3010	326.8	207.3	76.4	21S	162W
-2773	Feb 07	10:21:34	67129	7604	-59034	-11	N	t-	-1.2373	0.6222	-0.4463	228.4	-	-	20N	129E
-2773	Aug 02	20:38:31	67115	7601	-59028	-6	P	a-	0.9948	1.0102	0.0548	244.0	50.7	-	22S	30W
-2773	Dec 28	16:56:01	67103	7598	-59023	-39	Nx	-t	1.0194	1.0317	-0.0559	285.1	-	-	24N	26E
-2772	Jun 23	04:35:54	67089	7596	-59017	-34	P	-a	-0.8654	1.2581	0.2818	274.8	114.9	-	23S	152W
-2772	Dec 16	21:08:18	67075	7593	-59011	-29	T	-p	0.2838	2.3570	1.3178	344.0	214.3	79.9	22N	38W
-2771	Jun 12	15:00:08	67060	7590	-59005	-24	T-	pp	-0.1188	2.6544	1.6258	354.1	226.4	100.8	20S	51E
-2771	Dec 06	08:27:13	67046	7587	-58999	-19	T	a-	-0.4157	2.0893	1.1010	315.3	195.1	46.5	19N	152E
-2770	Jun 01	18:21:23	67032	7584	-58993	-14	P	t-	0.6639	1.6732	0.6071	338.6	175.5	-	16S	1E
-2770	Nov 25	23:47:50	67018	7582	-58987	-9	N	a-	-1.0639	0.8915	-0.0801	232.5	-	-	15N	79W
-2769	Apr 22	05:49:22	67006	7579	-58982	-42	N	-t	-1.3690	0.3651	-0.6724	175.7	-	-	4S	168W
-2769	May 21	19:03:46	67004	7579	-58981	-4	N	t-	1.4093	0.3014	-0.7566	164.6	-	-	12S	9W
-2769	Oct 17	01:29:30	66992	7576	-58976	-37	Nx	-a	1.0187	1.0030	-0.0252	261.1	-	-	1N	104W
-2768	Apr 10	14:40:13	66978	7574	-58970	-32	P	-h	-0.5467	1.8469	0.8627	314.3	185.4	-	1N	61E
-2768	Oct 05	07:22:56	66963	7571	-58964	-27	T	-p	0.3541	2.2499	1.1673	359.4	215.8	63.0	4S	168E
-2767	Mar 31	05:41:09	66949	7568	-58958	-22	T+	p-	0.2173	2.4323	1.4856	316.0	207.6	89.0	6N	163W
-2767	Sep 24	07:12:49	66935	7565	-58952	-17	T	p-	-0.3331	2.2985	1.1960	370.6	221.5	68.7	9S	172E
-2766	Mar 20	22:48:49	66921	7562	-58946	-12	P	a-	0.9462	1.0967	0.1466	252.9	82.3	-	10N	59W
-2766	Sep 13	07:48:31	66907	7560	-58940	-7	Nx	h-	-1.0087	1.0424	-0.0276	280.5	-	-	14S	163E
-2765	Feb 09	01:57:14	66895	7557	-58935	-40	P	-h	-0.9608	1.1111	0.0795	277.8	65.5	-	20N	106W
-2765	Aug 04	04:28:09	66881	7554	-58929	-35	N	-a	1.0447	0.9289	-0.0469	241.9	-	-	22S	148W
-2764	Jan 29	05:52:10	66867	7552	-58923	-30	T-	-p	-0.2505	2.4395	1.3578	368.9	226.6	87.1	23N	165W
-2764	Jul 23	20:32:32	66853	7549	-58917	-25	T	-p	0.3199	2.2463	1.2952	311.0	200.7	73.9	24S	30W
-2763	Jan 17	05:30:19	66838	7546	-58911	-20	P	t-	0.4616	2.0555	0.9673	359.0	207.5	-	24N	161W
-2763	Jul 13	12:41:34	66824	7543	-58905	-15	T	p-	-0.4054	2.0994	1.1284	315.9	197.7	52.4	24S	86E
-2762	Jan 06	08:24:24	66810	7540	-58899	-10	N	a-	1.1427	0.7854	-0.2623	243.9	-	-	25N	154E
-2762	Jun 03	12:08:26	66798	7538	-58894	-43	Ne	-t	1.5404	0.0527	-0.9889	68.9	-	-	16S	94E

-2762 Jul 03	00:21:04	66796	7538	-58893	-5	N	t-	-1.2003	0.6661	-0.3546	224.3	-	-	24S	90W
-2762 Nov 27	07:14:38	66784	7535	-58888	-38	P	-a	-0.9452	1.1135	0.1337	256.3	78.8	-	15N	169E
-2761 May 23	14:06:34	66770	7532	-58882	-33	P	-t	0.8151	1.3969	0.3286	320.8	135.3	-	14S	64E
-2761 Nov 16	22:50:58	66756	7530	-58876	-28	T	-p	-0.2829	2.3268	1.3508	315.9	202.8	78.8	12N	66W
-2760 May 11	15:27:27	66742	7527	-58870	-23	T+	pp	0.0390	2.8100	1.7631	364.7	232.1	105.3	10S	45E
-2760 Nov 05	12:32:35	66727	7524	-58864	-18	T	p-	0.4008	2.1306	1.1147	326.7	200.2	50.3	9N	88E
-2759 Apr 30	22:47:01	66713	7521	-58858	-13	P	a-	-0.7310	1.5139	0.5194	300.9	154.0	-	7S	65W
-2759 Oct 25	20:05:45	66699	7518	-58852	-8	N	t-	1.1376	0.8077	-0.2657	252.1	-	-	5N	25W
-2758 Mar 22	05:57:56	66687	7516	-58847	-41	N	-a	1.0689	0.8687	-0.0756	229.0	-	-	10N	167W
-2758 Apr 20	12:53:19	66685	7516	-58846	-3	N	a-	-1.4337	0.2022	-0.7477	119.3	-	-	4S	84E
-2758 Sep 15	01:42:55	66673	7513	-58841	-36	N	-t	-1.1946	0.7148	-0.3816	247.7	-	-	13S	106W
-2757 Mar 11	22:46:09	66659	7510	-58835	-31	T	-a	0.3559	2.1852	1.2245	315.1	200.8	66.9	13N	59W
-2757 Sep 04	03:57:24	66645	7508	-58829	-26	P	-t	-0.4613	2.0377	0.9859	341.7	201.4	-	16S	140W
-2756 Feb 29	11:43:24	66631	7505	-58823	-21	T	p-	-0.4016	2.1274	1.1149	333.7	204.8	51.5	16N	107E
-2756 Aug 23	13:34:26	66617	7502	-58817	-16	T	p-	0.2732	2.3527	1.3604	327.2	208.8	81.6	19S	75E
-2755 Feb 17	17:28:53	66603	7499	-58811	-11	N	t-	-1.1893	0.7098	-0.3574	242.3	-	-	18N	20E
-2755 Aug 13	04:45:33	66589	7496	-58805	-6	P	a-	0.9570	1.0808	0.1229	250.4	75.1	-	20S	154W
-2754 Jan 08	00:36:13	66577	7494	-58800	-39	N	-t	1.0399	0.9914	-0.0909	279.7	-	-	25N	90W
-2754 Jul 04	11:59:04	66563	7491	-58794	-34	P	-a	-0.9303	1.1418	0.1599	266.4	88.3	-	24S	95E
-2754 Dec 28	05:21:33	66548	7488	-58788	-29	T	-p	0.2944	2.3346	1.3012	341.9	213.1	78.1	23N	162W
-2753 Jun 23	21:49:11	66534	7486	-58782	-24	T-	pp	-0.1933	2.5206	1.4864	354.2	224.3	94.7	22S	53W
-2753 Dec 17	17:07:00	66520	7483	-58776	-19	T	a-	-0.4100	2.0979	1.1135	314.6	195.4	49.0	21N	20E
-2752 Jun 12	00:42:16	66506	7480	-58770	-14	P	t-	0.5804	1.8278	0.7588	347.8	191.4	-	19S	96W
-2752 Dec 06	08:38:23	66492	7477	-58764	-9	N	a-	-1.0635	0.8917	-0.0788	232.6	-	-	18N	147E
-2751 May 02	12:22:07	66480	7475	-58759	-42	N	-t	-1.4464	0.2210	-0.8126	137.9	-	-	8S	90E
-2751 Jun 01	01:25:56	66478	7474	-58758	-4	N	t-	1.3229	0.4593	-0.5976	199.7	-	-	16S	107W
-2751 Oct 27	10:02:53	66466	7472	-58753	-37	Nx	-a	1.0199	1.0030	-0.0294	262.1	-	-	6N	125E
-2750 Apr 21	21:45:48	66452	7469	-58747	-32	P	-h	-0.6195	1.7111	0.7314	306.5	174.0	-	4S	49W
-2750 Oct 16	15:27:57	66438	7467	-58741	-27	T	-p	0.3591	2.2427	1.1560	360.4	215.7	61.2	1N	44E
-2749 Apr 11	13:08:06	66424	7464	-58735	-22	T+	p-	0.1479	2.5584	1.6144	317.1	210.1	94.9	1N	81E
-2749 Oct 05	15:02:15	66410	7461	-58729	-17	T	p-	-0.3222	2.3196	1.2150	371.3	222.3	71.4	4S	52E
-2748 Mar 31	06:19:33	66395	7458	-58723	-12	P	a-	0.8834	1.2118	0.2620	262.9	108.4	-	6N	175W
-2748 Sep 23	15:45:56	66381	7455	-58717	-7	P	h-	-0.9917	1.0737	0.0037	282.9	14.5	-	10S	41E
-2747 Feb 19	09:23:43	66370	7453	-58712	-40	Nx	-h	-1.0113	1.0184	-0.0133	269.6	-	-	18N	141E
-2747 Aug 14	12:29:37	66356	7450	-58706	-35	N	-a	1.0777	0.8688	-0.1077	234.9	-	-	20S	90E
-2746 Feb 08	13:02:39	66341	7447	-58700	-30	T	-p	-0.2967	2.3539	1.2741	367.3	223.9	78.8	21N	86E
-2746 Aug 04	04:32:39	66327	7445	-58694	-25	T	-p	0.3631	2.1686	1.2144	309.3	197.4	64.6	22S	152W
-2745 Jan 28	12:50:11	66313	7442	-58688	-20	T	t-	0.4242	2.1215	1.0384	360.5	211.8	31.9	23N	88E
-2745 Jul 24	20:22:46	66299	7439	-58682	-15	T	p-	-0.3552	2.1944	1.2179	319.9	202.3	66.5	24S	30W
-2744 Jan 17	16:15:58	66285	7436	-58676	-10	N	a-	1.1149	0.8331	-0.2081	248.8	-	-	25N	35E

-2744	Jul 13	07:29:28	66271	7433	-58670	-5	N	t-	-1.1437	0.7731	-0.2541	240.3	-	-	25S	162E
-2744	Dec 07	16:01:05	66259	7431	-58665	-38	P	-a	-0.9467	1.1092	0.1324	255.4	78.3	-	19N	35E
-2743	Jun 02	20:22:02	66245	7428	-58659	-33	P	-t	0.9028	1.2366	0.1668	307.5	98.8	-	17S	32W
-2743	Nov 27	07:42:23	66231	7426	-58653	-28	T	-p	-0.2834	2.3260	1.3498	316.3	203.0	78.8	16N	159E
-2742	May 22	21:55:32	66217	7423	-58647	-23	T+	pp	0.1252	2.6508	1.6062	362.4	229.9	101.4	14S	55W
-2742	Nov 16	21:12:08	66203	7420	-58641	-18	T	p-	0.4036	2.1268	1.1084	327.8	200.4	49.1	13N	44W
-2741	May 12	05:44:00	66189	7417	-58635	-13	P	a-	-0.6492	1.6622	0.6714	308.3	170.2	-	11S	172W
-2741	Nov 06	04:22:33	66175	7414	-58629	-8	N	t-	1.1408	0.8034	-0.2731	252.3	-	-	10N	152W
-2740	Apr 01	13:29:02	66163	7412	-58624	-41	N	-a	1.1346	0.7468	-0.1951	214.8	-	-	6N	77E
-2740	Apr 30	20:11:00	66161	7412	-58623	-3	N	a-	-1.3574	0.3408	-0.6066	152.5	-	-	8S	28W
-2740	Sep 25	09:28:21	66149	7409	-58618	-36	N	-t	-1.2093	0.6886	-0.4095	243.5	-	-	9S	135E
-2739	Mar 22	06:17:36	66135	7406	-58612	-31	T	-a	0.4201	2.0673	1.1066	312.3	195.7	47.9	9N	175W
-2739	Sep 14	11:56:05	66121	7404	-58606	-26	P	-h	-0.4793	2.0046	0.9529	339.4	198.6	-	13S	98E
-2738	Mar 11	18:59:31	66107	7401	-58600	-21	T	p-	-0.3420	2.2371	1.2239	338.2	210.7	69.6	12N	5W
-2738	Sep 03	21:48:06	66093	7398	-58594	-16	T+	p-	0.2482	2.3988	1.4062	327.2	209.6	84.9	16S	51W
-2737	Mar 01	00:27:24	66078	7395	-58588	-11	N	t-	-1.1343	0.8100	-0.2562	256.8	-	-	15N	87W
-2737	Aug 24	12:59:52	66064	7393	-58582	-6	P	a-	0.9250	1.1407	0.1803	255.6	90.2	-	18S	81E
-2736	Jan 19	08:10:20	66053	7390	-58577	-39	N	-t	1.0659	0.9409	-0.1358	273.0	-	-	25N	156E
-2736	Jul 14	19:27:14	66039	7387	-58571	-34	P	-a	-0.9905	1.0345	0.0467	257.7	48.6	-	25S	18W
-2735	Jan 07	13:28:08	66025	7385	-58565	-29	T	-p	0.3113	2.3005	1.2734	339.4	211.5	75.0	24N	75E
-2735	Jul 04	04:42:33	66010	7382	-58559	-24	T-	-p	-0.2631	2.3954	1.3552	353.7	221.1	85.4	24S	158W
-2735	Dec 28	01:40:13	65996	7379	-58553	-19	T	p-	-0.3982	2.1172	1.1373	314.2	196.2	53.5	23N	109W
-2734	Jun 23	07:09:21	65982	7376	-58547	-14	P	t-	0.5022	1.9729	0.9008	355.3	203.5	-	22S	165E
-2734	Dec 17	17:22:24	65968	7374	-58541	-9	N	a-	-1.0580	0.9011	-0.0680	233.6	-	-	20N	14E
-2733	May 13	18:58:20	65957	7371	-58536	-42	Ne	-t	-1.5216	0.0814	-0.9489	84.4	-	-	12S	12W
-2733	Jun 12	07:55:34	65954	7371	-58535	-4	N	t-	1.2411	0.6091	-0.4472	226.2	-	-	19S	153E
-2733	Nov 07	18:36:13	65942	7368	-58530	-37	Nx	-a	1.0206	1.0035	-0.0323	263.2	-	-	10N	6W
-2732	May 02	04:50:29	65928	7366	-58524	-32	P	-a	-0.6939	1.5726	0.5967	297.6	160.1	-	8S	159W
-2732	Oct 26	23:36:07	65914	7363	-58518	-27	T	-p	0.3610	2.2410	1.1510	361.5	215.9	60.4	5N	80W
-2731	Apr 21	20:30:41	65900	7360	-58512	-22	T+	pp	0.0742	2.6926	1.7506	317.6	211.5	98.5	3S	33W
-2731	Oct 15	22:58:09	65886	7357	-58506	-17	T	p-	-0.3164	2.3308	1.2250	371.5	222.6	72.7	0N	70W
-2730	Apr 11	13:43:12	65872	7355	-58500	-12	P	a-	0.8151	1.3373	0.3871	272.8	129.6	-	2N	71E
-2730	Oct 04	23:53:03	65858	7352	-58494	-7	P	h-	-0.9815	1.0920	0.0226	284.0	35.9	-	5S	83W
-2729	Mar 02	16:39:15	65846	7349	-58489	-40	N	-h	-1.0696	0.9116	-0.1203	258.8	-	-	14N	29E
-2729	Aug 25	20:39:55	65832	7347	-58483	-35	N	-a	1.1041	0.8207	-0.1567	229.0	-	-	17S	35W
-2728	Feb 19	20:03:33	65818	7344	-58477	-30	T	-t	-0.3501	2.2547	1.1771	364.9	219.9	65.7	18N	22W
-2728	Aug 14	12:39:56	65804	7341	-58471	-25	T	-p	0.4001	2.1025	1.1449	307.8	194.3	54.3	21S	85E
-2727	Feb 07	20:01:08	65790	7338	-58465	-20	T	t-	0.3789	2.2020	1.1242	362.1	216.4	55.8	22N	21W
-2727	Aug 04	04:10:19	65776	7336	-58459	-15	T	p-	-0.3110	2.2786	1.2961	323.4	205.9	75.6	23S	149W
-2726	Jan 28	00:00:30	65762	7333	-58453	-10	N	a-	1.0804	0.8929	-0.1415	254.8	-	-	24N	82W

-2726 Jul 24	14:43:42	65748	7330	-58447	-5	N	t-	-1.0924	0.8706	-0.1632	253.7	-	-	25S	52E
-2726 Dec 19	00:43:09	65736	7328	-58442	-38	P	-a	-0.9522	1.0974	0.1239	253.9	75.7	-	21N	97W
-2725 Jun 14	02:42:50	65722	7325	-58436	-33	P	-t	0.9859	1.0850	0.0135	292.9	28.7	-	19S	130W
-2725 Dec 08	16:30:40	65708	7322	-58430	-28	T	-p	-0.2862	2.3208	1.3448	316.6	203.1	78.5	19N	25E
-2724 Jun 02	04:27:21	65694	7319	-58424	-23	T+	pp	0.2091	2.4959	1.4532	359.0	226.0	93.6	17S	156W
-2724 Nov 27	05:49:07	65680	7317	-58418	-18	T	p-	0.4050	2.1253	1.1047	328.9	200.8	48.5	17N	175W
-2723 May 22	12:43:42	65666	7314	-58412	-13	P	a-	-0.5686	1.8084	0.8207	314.3	182.9	-	15S	80E
-2723 Nov 16	12:36:51	65652	7311	-58406	-8	N	t-	1.1427	0.8011	-0.2778	252.8	-	-	14N	82E
-2722 Apr 12	20:56:16	65641	7309	-58401	-41	N	-a	1.2037	0.6193	-0.3209	198.0	-	-	2N	38W
-2722 May 12	03:29:52	65638	7308	-58400	-3	N	a-	-1.2817	0.4789	-0.4668	178.0	-	-	12S	141W
-2722 Oct 06	17:21:12	65627	7306	-58395	-36	N	-t	-1.2182	0.6727	-0.4263	240.8	-	-	5S	14E
-2721 Apr 02	13:42:55	65612	7303	-58389	-31	P	-a	0.4890	1.9412	0.9799	308.7	189.0	-	5N	71E
-2721 Sep 25	20:02:55	65598	7301	-58383	-26	P	-a	-0.4915	1.9819	0.9308	337.4	196.5	-	8S	26W
-2720 Mar 22	02:06:41	65584	7298	-58377	-21	T	pp	-0.2759	2.3589	1.3446	342.5	216.2	83.0	8N	115W
-2720 Sep 14	06:10:49	65570	7295	-58371	-16	T+	p-	0.2301	2.4321	1.4394	326.9	210.0	87.0	12S	179W
-2719 Mar 11	07:13:27	65556	7292	-58365	-11	N	t-	-1.0698	0.9280	-0.1373	272.0	-	-	12N	169E
-2719 Sep 03	21:23:54	65542	7289	-58359	-6	P	a-	0.9011	1.1859	0.2229	259.3	99.6	-	15S	47W
-2718 Jan 29	15:34:25	65531	7287	-58354	-39	N	-t	1.1004	0.8746	-0.1961	264.0	-	-	24N	44E
-2718 Jul 26	03:02:18	65517	7284	-58348	-34	N	-a	-1.0438	0.9398	-0.0543	249.3	-	-	25S	133W
-2717 Jan 18	21:27:23	65503	7282	-58342	-29	T	-p	0.3350	2.2537	1.2331	336.5	209.3	70.1	24N	46W
-2717 Jul 15	11:42:03	65489	7279	-58336	-24	T	-t	-0.3269	2.2815	1.2351	352.7	217.0	72.7	24S	96E
-2716 Jan 08	10:08:09	65475	7276	-58330	-19	T	p-	-0.3818	2.1449	1.1696	314.1	197.4	58.8	24N	123E
-2716 Jul 03	13:40:36	65461	7273	-58324	-14	T	t-	0.4274	2.1119	1.0363	361.4	213.0	31.3	23S	65E
-2716 Dec 28	02:01:56	65446	7271	-58318	-9	N	a-	-1.0493	0.9163	-0.0512	235.3	-	-	22N	117W
-2715 Jun 22	14:30:31	65433	7268	-58312	-4	N	t-	1.1624	0.7534	-0.3026	247.4	-	-	21S	52E
-2715 Nov 18	03:08:49	65421	7265	-58307	-37	Nx	-a	1.0209	1.0042	-0.0343	264.2	-	-	14N	136W
-2714 May 13	11:56:43	65407	7263	-58301	-32	P	-a	-0.7677	1.4355	0.4629	287.8	143.5	-	12S	91E
-2714 Nov 07	07:45:25	65393	7260	-58295	-27	T	-p	0.3615	2.2414	1.1489	362.5	216.2	60.1	10N	155E
-2713 May 03	03:52:57	65379	7257	-58289	-22	T+	pp	0.0001	2.8277	1.8872	317.6	212.0	99.7	7S	147W
-2713 Oct 27	06:56:56	65365	7254	-58283	-17	T	p-	-0.3129	2.3374	1.2311	371.5	222.8	73.5	5N	167E
-2712 Apr 21	21:04:02	65351	7252	-58277	-12	P	a-	0.7449	1.4665	0.5154	282.0	147.0	-	3S	43W
-2712 Oct 15	08:05:32	65337	7249	-58271	-7	P	a-	-0.9754	1.1027	0.0346	284.2	44.2	-	1S	151E
-2711 Mar 12	23:44:08	65325	7247	-58266	-40	N	-t	-1.1350	0.7918	-0.2407	245.0	-	-	11N	80W
-2711 Apr 11	10:51:19	65323	7246	-58265	-2	Nb	t-	1.5498	0.0136	-0.9847	33.3	-	-	2N	111E
-2711 Sep 05	04:59:39	65311	7244	-58260	-35	N	-a	1.1234	0.7858	-0.1924	224.4	-	-	14S	162W
-2710 Mar 02	02:53:35	65297	7241	-58254	-30	T	-t	-0.4116	2.1410	1.0653	361.5	214.1	41.5	15N	126W
-2710 Aug 25	20:55:56	65283	7238	-58248	-25	T	-a	0.4296	2.0501	1.0890	306.5	191.5	43.3	18S	41W
-2709 Feb 19	03:03:00	65269	7236	-58242	-20	T	t-	0.3258	2.2967	1.2243	363.6	221.0	72.4	19N	129W
-2709 Aug 15	12:06:18	65255	7233	-58236	-15	T	p-	-0.2747	2.3482	1.3597	326.4	208.6	81.5	21S	91E
-2708 Feb 08	07:36:31	65241	7230	-58230	-10	N	a-	1.0382	0.9669	-0.0606	261.8	-	-	22N	163E

-2708 Aug 03	22:04:56	65227	7227	-58224	-5	N	t-	-1.0477	0.9561	-0.0845	264.9	-	-	24S	59W
-2708 Dec 29	09:19:09	65216	7225	-58219	-38	P	-a	-0.9630	1.0759	0.1061	251.5	70.2	-	22N	133E
-2707 Jun 24	09:08:31	65202	7222	-58213	-33	N	-t	1.0644	0.9421	-0.1315	277.1	-	-	21S	132E
-2707 Dec 19	01:12:42	65188	7220	-58207	-28	T	-p	-0.2937	2.3067	1.3313	316.7	202.9	77.4	22N	106W
-2706 Jun 13	11:05:14	65174	7217	-58201	-23	T	pp	0.2885	2.3494	1.3080	354.9	220.6	81.4	20S	102E
-2706 Dec 08	14:22:11	65160	7214	-58195	-18	T	p-	0.4044	2.1270	1.1050	330.0	201.4	48.6	20N	55E
-2705 Jun 02	19:46:50	65146	7211	-58189	-13	P	a-	-0.4899	1.9516	0.9663	319.2	192.8	-	18S	28W
-2705 Nov 27	20:49:31	65132	7208	-58183	-8	N	t-	1.1441	0.7993	-0.2812	253.3	-	-	17N	43W
-2704 Apr 23	04:20:01	65120	7206	-58178	-41	N	-a	1.2754	0.4872	-0.4520	177.9	-	-	3S	153W
-2704 May 22	10:49:04	65118	7206	-58177	-3	N	a-	-1.2059	0.6174	-0.3272	199.0	-	-	15S	106E
-2704 Oct 17	01:20:37	65106	7203	-58172	-36	N	-t	-1.2224	0.6652	-0.4340	239.3	-	-	0N	109W
-2703 Apr 12	21:01:06	65092	7201	-58166	-31	P	-a	0.5632	1.8057	0.8433	304.0	180.1	-	1N	42W
-2703 Oct 06	04:18:27	65078	7198	-58160	-26	P	-a	-0.4974	1.9705	0.9204	335.8	195.2	-	4S	153W
-2702 Apr 02	09:06:13	65064	7195	-58154	-21	T-	pp	-0.2045	2.4907	1.4749	346.4	220.8	93.0	4N	137E
-2702 Sep 25	14:40:59	65050	7192	-58148	-16	T+	p-	0.2175	2.4552	1.4625	326.5	210.0	88.2	8S	51E
-2701 Mar 22	13:52:51	65036	7190	-58142	-11	Nx	t-	-1.0002	1.0554	-0.0092	286.8	-	-	8N	66E
-2701 Sep 15	05:54:58	65022	7187	-58136	-6	P	a-	0.8832	1.2201	0.2546	262.1	106.0	-	11S	177W
-2700 Feb 09	22:51:34	65011	7185	-58131	-39	N	-t	1.1409	0.7971	-0.2675	253.0	-	-	22N	67W
-2700 Aug 05	10:43:31	64997	7182	-58125	-34	N	-a	-1.0912	0.8561	-0.1444	241.1	-	-	24S	110E

# 27TH CENTURY BCE

**In the 27th century BCE the total number of lunar eclipses was 229 lunar eclipses: 73 penumbral lunar eclipses, 77 partial lunar eclipses, 79 total lunar eclipses (34 central total lunar eclipses, 45 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
	ECLIPSE														
-2699 Jan 29	05:19:29	64983	7179	-58119	-29	T	-p	0.3656	2.1941	1.1802	333.2	206.3	62.6	23N	165W

-2699 Jul 25	18:48:25	64969	7176	-58113	-24	T	-t	-0.3842	2.1797	1.1270	351.4	212.4	55.5	24S	12W
-2698 Jan 18	18:26:55	64955	7174	-58107	-19	T	p-	-0.3572	2.1877	1.2172	314.3	199.3	65.4	23N	3W
-2698 Jul 14	20:21:07	64941	7171	-58101	-14	T	t-	0.3600	2.2373	1.1582	366.1	219.9	62.8	24S	36W
-2697 Jan 08	10:33:19	64927	7168	-58095	-9	N	a-	-1.0339	0.9436	-0.0221	238.2	-	-	23N	114E
-2697 Jul 03	21:13:57	64913	7165	-58089	-4	N	t-	1.0892	0.8878	-0.1682	264.3	-	-	22S	50W
-2697 Nov 29	11:37:38	64901	7163	-58084	-37	Nx	-a	1.0238	1.0000	-0.0406	264.7	-	-	18N	95E
-2696 May 23	19:04:52	64887	7160	-58078	-32	P	-a	-0.8409	1.2999	0.3298	277.2	123.2	-	15S	19W
-2696 Nov 17	15:53:18	64873	7158	-58072	-27	T	-p	0.3623	2.2407	1.1467	363.3	216.4	59.8	14N	30E
-2695 May 13	11:13:09	64860	7155	-58066	-22	T-	pp	-0.0758	2.6886	1.7488	316.9	211.2	98.4	11S	100E
-2695 Nov 06	14:59:00	64846	7152	-58060	-17	T	p-	-0.3119	2.3391	1.2333	371.3	222.7	73.7	9N	44E
-2694 May 03	04:20:56	64832	7149	-58054	-12	P	a-	0.6721	1.6009	0.6482	290.6	161.8	-	7S	156W
-2694 Oct 26	16:23:14	64818	7147	-58048	-7	P	a-	-0.9725	1.1070	0.0407	283.7	47.8	-	4N	24E
-2693 Mar 24	06:40:11	64806	7144	-58043	-40	N	-t	-1.2063	0.6614	-0.3720	227.7	-	-	7N	173E
-2693 Apr 22	17:48:17	64804	7144	-58042	-2	N	t-	1.4816	0.1400	-0.8609	106.2	-	-	2S	4E
-2693 Sep 16	13:28:08	64792	7142	-58037	-35	N	-a	1.1361	0.7628	-0.2162	221.2	-	-	10S	69E
-2692 Mar 12	09:34:25	64778	7139	-58031	-30	P	-t	-0.4801	2.0141	0.9406	356.8	206.3	-	12N	131E
-2692 Sep 05	05:19:35	64764	7136	-58025	-25	T	-a	0.4526	2.0096	1.0450	305.6	189.2	31.2	15S	169W
-2691 Mar 01	09:57:17	64750	7133	-58019	-20	T+	p-	0.2657	2.4042	1.3373	365.0	225.1	85.2	16N	126E
-2691 Aug 25	20:09:32	64736	7131	-58013	-15	T-	p-	-0.2452	2.4053	1.4107	329.0	210.7	85.6	19S	32W
-2690 Feb 18	15:05:31	64723	7128	-58007	-10	P	a-	0.9892	1.0534	0.0327	269.4	42.0	-	20N	49E
-2690 Aug 15	05:33:58	64709	7125	-58001	-5	Nx	t-	-1.0101	1.0286	-0.0188	274.0	-	-	22S	173W
-2689 Jan 09	17:49:27	64697	7123	-57996	-38	P	-a	-0.9785	1.0454	0.0793	248.3	60.8	-	23N	5E
-2689 Jul 05	15:40:59	64683	7120	-57990	-33	N	-t	1.1371	0.8098	-0.2660	260.4	-	-	23S	32E
-2689 Dec 30	09:49:12	64669	7118	-57984	-28	T	-p	-0.3055	2.2847	1.3101	316.6	202.5	75.6	23N	123E
-2688 Jun 23	17:50:10	64655	7115	-57978	-23	T	-p	0.3628	2.2126	1.1722	350.1	214.1	63.6	22S	1W
-2688 Dec 18	22:48:15	64641	7112	-57972	-18	T	p-	0.3986	2.1382	1.1151	331.5	202.5	50.9	22N	73W
-2687 Jun 13	02:55:40	64627	7109	-57966	-13	T	a-	-0.4148	2.0885	1.1051	322.8	200.3	48.6	20S	138W
-2687 Dec 08	04:56:09	64613	7107	-57960	-8	N	t-	1.1413	0.8049	-0.2765	254.7	-	-	21N	166W
-2686 May 04	11:42:57	64602	7104	-57955	-41	N	-a	1.3478	0.3541	-0.5848	153.6	-	-	7S	93E
-2686 Jun 02	18:12:25	64600	7104	-57954	-3	N	a-	-1.1329	0.7512	-0.1931	216.3	-	-	19S	7W
-2686 Oct 28	09:22:48	64588	7102	-57949	-36	N	-t	-1.2247	0.6607	-0.4379	238.2	-	-	5N	128E
-2685 Apr 24	04:16:07	64574	7099	-57943	-31	P	-a	0.6392	1.6670	0.7029	298.3	168.8	-	3S	154W
-2685 Oct 17	12:40:08	64560	7096	-57937	-26	P	-a	-0.4992	1.9665	0.9180	334.5	194.4	-	0N	79E
-2684 Apr 12	15:57:35	64546	7093	-57931	-21	T-	pp	-0.1273	2.6334	1.6156	349.7	224.5	99.9	0N	31E
-2684 Oct 05	23:18:49	64532	7091	-57925	-16	T+	p-	0.2108	2.4674	1.4751	325.8	209.8	88.7	3S	81W
-2683 Apr 01	20:22:25	64518	7088	-57919	-11	P	t-	-0.9230	1.1968	0.1326	301.3	87.9	-	4N	35W
-2683 Sep 25	14:34:17	64505	7085	-57913	-6	P	a-	0.8720	1.2417	0.2739	263.9	109.6	-	7S	50E
-2682 Feb 20	05:58:45	64493	7083	-57908	-39	N	-t	1.1901	0.7039	-0.3545	239.0	-	-	19N	175W
-2682 Aug 16	18:33:23	64479	7080	-57902	-34	N	-a	-1.1307	0.7869	-0.2203	233.9	-	-	22S	9W
-2681 Feb 09	13:04:11	64465	7077	-57896	-29	T	-p	0.4034	2.1214	1.1142	329.3	202.5	50.8	21N	78E

-2681	Aug 06	02:01:04	64451	7075	-57890	-24	T	-t	-0.4354	2.0890	1.0297	350.0	207.4	27.7	23S	122W
-2680	Jan 30	02:39:32	64437	7072	-57884	-19	T	p-	-0.3270	2.2407	1.2750	314.8	201.4	72.2	22N	127W
-2680	Jul 25	03:08:34	64423	7069	-57878	-14	T	p-	0.2980	2.3529	1.2701	369.8	225.0	78.8	23S	139W
-2679	Jan 18	18:56:54	64410	7067	-57872	-9	P	a-	-1.0127	0.9815	0.0178	242.1	29.1	-	23N	13W
-2679	Jul 14	04:05:36	64396	7064	-57866	-4	Nx	t-	1.0215	1.0120	-0.0443	277.9	-	-	23S	155W
-2679	Dec 09	20:02:13	64384	7062	-57861	-37	N	-a	1.0293	0.9906	-0.0516	264.6	-	-	21N	33W
-2678	Jun 04	02:17:27	64370	7059	-57855	-32	P	-a	-0.9110	1.1704	0.2023	265.9	98.0	-	19S	129W
-2678	Nov 28	23:57:53	64356	7056	-57849	-27	T	-t	0.3653	2.2356	1.1408	363.9	216.5	58.8	17N	93W
-2677	May 24	18:36:06	64342	7053	-57843	-22	T-	-p	-0.1495	2.5532	1.6134	315.6	209.5	94.7	15S	14W
-2677	Nov 17	23:01:01	64328	7051	-57837	-17	T	p-	-0.3106	2.3409	1.2363	370.8	222.7	74.1	13N	79W
-2676	May 13	11:36:02	64314	7048	-57831	-12	P	a-	0.5984	1.7374	0.7824	298.5	174.3	-	11S	92E
-2676	Nov 06	00:43:41	64301	7045	-57825	-7	P	a-	-0.9712	1.1081	0.0444	282.8	49.7	-	8N	104W
-2675	Apr 03	13:28:06	64289	7043	-57820	-40	N	-t	-1.2830	0.5213	-0.5134	205.6	-	-	3N	68E
-2675	May 03	00:41:07	64287	7042	-57819	-2	N	t-	1.4106	0.2719	-0.7321	146.9	-	-	6S	103W
-2675	Sep 26	22:04:01	64275	7040	-57814	-35	N	-a	1.1435	0.7495	-0.2299	219.2	-	-	6S	63W
-2674	Mar 23	16:06:37	64261	7037	-57808	-30	P	-t	-0.5552	1.8755	0.8036	350.7	195.6	-	8N	30E
-2674	Sep 16	13:51:26	64247	7035	-57802	-25	T	-a	0.4689	1.9816	1.0135	305.1	187.5	17.3	11S	61E
-2673	Mar 12	16:44:23	64234	7032	-57796	-20	T+	pp	0.1992	2.5236	1.4620	365.9	228.6	94.8	12N	21E
-2673	Sep 06	04:19:59	64220	7029	-57790	-15	T-	p-	-0.2225	2.4500	1.4494	331.3	212.2	88.3	15S	156W
-2672	Feb 29	22:27:18	64206	7027	-57784	-10	P	a-	0.9333	1.1526	0.1386	277.4	84.9	-	17N	64W
-2672	Aug 25	13:11:12	64192	7024	-57778	-5	P	t-	-0.9800	1.0872	0.0330	281.2	43.2	-	19S	71E
-2671	Jan 20	02:10:27	64180	7022	-57773	-38	P	-a	-1.0021	1.0002	0.0380	243.6	42.3	-	23N	122W
-2671	Jul 15	22:21:51	64167	7019	-57767	-33	N	-t	1.2028	0.6905	-0.3877	243.3	-	-	23S	69W
-2670	Jan 09	18:17:22	64153	7016	-57761	-28	T	-p	-0.3237	2.2506	1.2771	316.3	201.7	72.4	24N	5W
-2670	Jul 05	00:43:46	64139	7013	-57755	-23	T	-t	0.4310	2.0872	1.0475	344.8	206.8	34.6	23S	106W
-2670	Dec 30	07:07:15	64125	7011	-57749	-18	T	p-	0.3879	2.1581	1.1344	333.2	204.1	54.8	24N	161E
-2669	Jun 24	10:11:06	64111	7008	-57743	-13	T	a-	-0.3443	2.2172	1.2351	325.4	205.8	69.5	22S	111E
-2669	Dec 19	12:58:00	64097	7005	-57737	-8	N	t-	1.1352	0.8163	-0.2653	256.8	-	-	23N	72E
-2668	May 14	19:03:42	64086	7003	-57732	-41	N	-a	1.4219	0.2183	-0.7209	122.2	-	-	10S	20W
-2668	Jun 13	01:37:43	64083	7003	-57731	-3	N	a-	-1.0612	0.8829	-0.0617	231.1	-	-	21S	121W
-2668	Nov 07	17:29:14	64072	7000	-57726	-36	N	-t	-1.2239	0.6613	-0.4359	237.9	-	-	9N	4E
-2667	May 04	11:26:56	64058	6998	-57720	-31	P	-a	0.7178	1.5241	0.5575	291.3	154.3	-	7S	95E
-2667	Oct 27	21:06:35	64044	6995	-57714	-26	P	-a	-0.4978	1.9679	0.9216	333.3	194.1	-	5N	51W
-2666	Apr 23	22:44:11	64030	6992	-57708	-21	T-	pp	-0.0472	2.7817	1.7613	352.2	226.7	103.6	4S	74W
-2666	Oct 17	08:01:57	64016	6990	-57702	-16	T+	p-	0.2081	2.4719	1.4804	325.1	209.5	88.9	1N	146E
-2665	Apr 13	02:47:37	64002	6987	-57696	-11	P	t-	-0.8423	1.3448	0.2808	314.6	125.3	-	0S	134W
-2665	Oct 06	23:18:07	63989	6984	-57690	-6	P	a-	0.8647	1.2561	0.2863	265.2	111.9	-	3S	83W
-2664	Mar 02	13:00:24	63977	6982	-57685	-39	N	-t	1.2442	0.6014	-0.4508	222.2	-	-	16N	77E
-2664	Aug 27	02:29:57	63963	6979	-57679	-34	N	-a	-1.1641	0.7289	-0.2848	227.5	-	-	19S	129W
-2663	Feb 19	20:40:39	63949	6976	-57673	-29	T	-a	0.4490	2.0343	1.0338	324.7	197.5	28.3	19N	38W

-2663	Aug 16	09:22:27	63936	6974	-57667	-24	P	-t	-0.4786	2.0128	0.9472	348.6	202.5	-	21S	127E
-2662	Feb 09	10:43:10	63922	6971	-57661	-19	T	p-	-0.2886	2.3088	1.3477	315.5	203.7	79.1	21N	110E
-2662	Aug 05	10:06:17	63908	6968	-57655	-14	T+	pp	0.2444	2.4531	1.3667	372.5	228.5	88.4	22S	115E
-2661	Jan 30	03:11:10	63894	6966	-57649	-9	P	a-	-0.9841	1.0331	0.0713	247.2	57.8	-	22N	138W
-2661	Jul 25	11:08:32	63880	6963	-57643	-4	P	t-	0.9618	1.1219	0.0651	288.4	61.1	-	23S	98E
-2661	Dec 21	04:19:47	63869	6961	-57638	-37	N	-a	1.0398	0.9718	-0.0713	263.5	-	-	23N	159W
-2660	Jun 14	09:33:59	63855	6958	-57632	-32	P	-a	-0.9785	1.0458	0.0790	254.0	62.1	-	21S	119E
-2660	Dec 09	07:58:04	63841	6955	-57626	-27	T	-t	0.3714	2.2244	1.1295	364.2	216.3	56.7	20N	146E
-2659	Jun 04	02:00:24	63827	6952	-57620	-22	T-	-p	-0.2224	2.4199	1.4793	313.8	206.6	88.3	18S	127W
-2659	Nov 28	07:01:23	63813	6950	-57614	-17	T	p-	-0.3074	2.3456	1.2432	370.3	222.8	74.9	17N	159E
-2658	May 24	18:50:49	63800	6947	-57608	-12	P	a-	0.5248	1.8739	0.9159	305.5	184.7	-	14S	19W
-2658	Nov 17	09:06:28	63786	6944	-57602	-7	P	a-	-0.9706	1.1075	0.0471	281.7	51.1	-	12N	128E
-2657	Apr 14	20:09:11	63774	6942	-57597	-40	N	-t	-1.3638	0.3739	-0.6624	177.2	-	-	2S	36W
-2657	May 14	07:30:39	63772	6942	-57596	-2	N	t-	1.3375	0.4077	-0.6000	178.4	-	-	10S	152E
-2657	Oct 08	06:46:18	63760	6939	-57591	-35	N	-a	1.1463	0.7446	-0.2351	218.2	-	-	2S	164E
-2656	Apr 02	22:32:19	63746	6937	-57585	-30	P	-t	-0.6352	1.7280	0.6577	343.0	181.6	-	3N	70W
-2656	Sep 26	22:29:57	63733	6934	-57579	-25	P	-a	0.4791	1.9643	0.9931	304.9	186.4	-	7S	72W
-2655	Mar 22	23:24:50	63719	6931	-57573	-20	T+	pp	0.1265	2.6543	1.5978	366.2	231.0	101.4	8N	82W
-2655	Sep 16	12:37:50	63705	6929	-57567	-15	T-	p-	-0.2070	2.4814	1.4751	333.3	213.4	90.0	11S	77E
-2654	Mar 12	05:43:54	63691	6926	-57561	-10	P	a-	0.8721	1.2616	0.2540	285.3	112.6	-	13N	176W
-2654	Sep 05	20:55:09	63677	6923	-57555	-5	P	t-	-0.9562	1.1341	0.0736	287.1	64.2	-	16S	47W
-2653	Jan 31	10:24:51	63666	6921	-57550	-38	N	-a	-1.0313	0.9446	-0.0137	237.7	-	-	21N	113E
-2653	Mar 01	18:53:34	63664	6920	-57549	0	Nb	a-	1.5443	0.0053	-0.9569	19.8	-	-	17N	13W
-2653	Jul 27	05:12:22	63652	6918	-57544	-33	N	-t	1.2605	0.5859	-0.4948	226.4	-	-	22S	173W
-2652	Jan 21	02:37:40	63638	6916	-57538	-28	T	-p	-0.3482	2.2051	1.2328	315.6	200.3	67.5	23N	131W
-2652	Jul 15	07:46:15	63624	6913	-57532	-23	P	-t	0.4927	1.9738	0.9344	339.3	198.8	-	24S	147E
-2651	Jan 09	15:16:53	63611	6910	-57526	-18	T	p-	0.3704	2.1904	1.1664	335.3	206.4	60.6	24N	38E
-2651	Jul 04	17:34:47	63597	6907	-57520	-13	T	p-	-0.2798	2.3352	1.3538	327.1	209.6	81.6	24S	1W
-2651	Dec 29	20:49:45	63583	6905	-57514	-8	N	t-	1.1217	0.8408	-0.2404	260.6	-	-	24N	47W
-2650	May 26	02:26:41	63571	6903	-57509	-41	Ne	-a	1.4939	0.0869	-0.8535	78.1	-	-	14S	134W
-2650	Jun 24	09:09:58	63569	6902	-57508	-3	P	a-	-0.9950	1.0049	0.0593	243.1	52.7	-	23S	124E
-2650	Nov 19	01:35:15	63558	6900	-57503	-36	N	-t	-1.2235	0.6610	-0.4339	237.3	-	-	13N	120W
-2649	May 15	18:35:55	63544	6897	-57497	-31	P	-a	0.7969	1.3804	0.4107	283.0	135.9	-	11S	16W
-2649	Nov 08	05:35:23	63530	6894	-57491	-26	P	-p	-0.4952	1.9712	0.9278	332.2	194.0	-	9N	180E
-2648	May 04	05:25:41	63516	6892	-57485	-21	T+	pp	0.0360	2.8038	1.7803	353.9	227.6	104.1	8S	178W
-2648	Oct 27	16:49:17	63502	6889	-57479	-16	T+	p-	0.2082	2.4711	1.4809	324.3	209.1	88.7	6N	11E
-2647	Apr 23	09:05:32	63489	6886	-57473	-11	P	t-	-0.7556	1.5040	0.4396	327.2	153.3	-	5S	128E
-2647	Oct 17	08:07:59	63475	6884	-57467	-6	P	a-	0.8625	1.2610	0.2896	265.7	112.5	-	2N	142E
-2646	Mar 13	19:54:11	63463	6881	-57462	-39	N	-t	1.3053	0.4863	-0.5600	201.1	-	-	13N	29W
-2646	Apr 12	09:46:02	63461	6881	-57461	-1	N	t-	-1.5005	0.1353	-0.9252	112.1	-	-	1S	119E



-2646 Sep 07	10:34:06	63450	6879	-57456	-34	N	-a	-1.1906	0.6836	-0.3365	222.3	-	-	15S	107E
-2646 Oct 06	22:53:46	63447	6878	-57455	4	N	a-	1.5552	0.0038	-0.9947	17.1	-	-	2S	80W
-2645 Mar 03	04:11:00	63436	6876	-57450	-29	P	-a	0.5007	1.9364	0.9422	319.4	191.2	-	16N	153W
-2645 Aug 27	16:51:49	63422	6873	-57444	-24	P	-t	-0.5146	1.9499	0.8781	347.4	197.9	-	18S	13E
-2644 Feb 20	18:39:29	63408	6871	-57438	-19	T-	p-	-0.2438	2.3887	1.4321	316.2	206.1	85.5	18N	11W
-2644 Aug 15	17:12:45	63394	6868	-57432	-14	T+	pp	0.1977	2.5406	1.4506	374.5	231.0	94.6	20S	7E
-2643 Feb 09	11:17:19	63381	6865	-57426	-9	P	a-	-0.9492	1.0961	0.1362	253.2	79.3	-	20N	99E
-2643 Aug 04	18:21:33	63367	6863	-57420	-4	P	t-	0.9091	1.2189	0.1615	296.7	94.6	-	22S	12W
-2643 Dec 31	12:29:29	63355	6860	-57415	-37	N	-a	1.0561	0.9423	-0.1014	261.1	-	-	25N	78E
-2642 Jun 25	16:57:50	63342	6858	-57409	-32	N	-a	-1.0409	0.9310	-0.0350	241.9	-	-	23S	7E
-2642 Dec 20	15:52:30	63328	6855	-57403	-27	T	-t	0.3821	2.2045	1.1102	364.0	215.6	52.7	23N	26E
-2641 Jun 15	09:28:30	63314	6852	-57397	-22	T	-p	-0.2923	2.2924	1.3505	311.4	202.8	79.2	21S	119E
-2641 Dec 09	14:58:37	63300	6850	-57391	-17	T	p-	-0.3012	2.3554	1.2560	369.8	223.1	76.5	20N	38E
-2640 Jun 04	02:06:52	63286	6847	-57385	-12	T	a-	0.4525	2.0083	1.0467	311.8	193.3	32.4	18S	131W
-2640 Nov 27	17:27:17	63273	6844	-57379	-7	P	a-	-0.9678	1.1106	0.0543	280.9	54.6	-	16N	1E
-2639 Apr 25	02:44:35	63261	6842	-57374	-40	N	-t	-1.4477	0.2211	-0.8174	138.7	-	-	6S	138W
-2639 May 24	14:19:16	63259	6841	-57373	-2	N	t-	1.2644	0.5442	-0.4679	204.4	-	-	14S	46E
-2639 Oct 18	15:33:33	63248	6839	-57368	-35	N	-a	1.1456	0.7457	-0.2338	218.0	-	-	3N	29E
-2638 Apr 14	04:53:07	63234	6837	-57362	-30	P	-t	-0.7186	1.5745	0.5053	333.6	163.2	-	1S	169W
-2638 Oct 08	07:13:33	63220	6834	-57356	-25	P	-a	0.4852	1.9547	0.9806	305.1	185.8	-	2S	155E
-2637 Apr 03	06:01:18	63206	6831	-57350	-20	T+	pp	0.0497	2.7928	1.7411	365.7	232.2	104.9	4N	176E
-2637 Sep 27	21:02:20	63192	6829	-57344	-15	T-	p-	-0.1975	2.5015	1.4897	335.1	214.2	91.0	7S	52W
-2636 Mar 22	12:53:39	63179	6826	-57338	-10	P	a-	0.8040	1.3834	0.3820	293.1	135.1	-	9N	74E
-2636 Sep 16	04:47:45	63165	6823	-57332	-5	P	t-	-0.9399	1.1669	0.1004	291.4	74.9	-	12S	168W
-2635 Feb 10	18:29:51	63153	6821	-57327	-38	N	-a	-1.0687	0.8741	-0.0805	230.1	-	-	19N	10W
-2635 Mar 12	02:31:42	63151	6820	-57326	0	N	a-	1.4866	0.1088	-0.8487	88.4	-	-	13N	130W
-2635 Aug 06	12:13:32	63140	6818	-57321	-33	N	-t	1.3098	0.4967	-0.5866	210.1	-	-	21S	80E
-2634 Jan 31	10:47:53	63126	6816	-57315	-28	T	-a	-0.3808	2.1448	1.1735	314.5	198.2	59.6	22N	105E
-2634 Jul 26	14:59:47	63112	6813	-57309	-23	P	-t	0.5463	1.8755	0.8362	334.0	190.8	-	23S	37E
-2633 Jan 20	23:18:09	63098	6810	-57303	-18	T	p-	0.3468	2.2338	1.2096	337.6	209.0	67.2	24N	83W
-2633 Jul 16	01:05:35	63085	6808	-57297	-13	T-	p-	-0.2203	2.4441	1.4631	328.1	212.2	89.3	24S	115W
-2632 Jan 10	04:34:41	63071	6805	-57291	-8	N	t-	1.1032	0.8743	-0.2060	265.3	-	-	25N	164W
-2632 Jul 04	16:46:44	63057	6802	-57285	-3	P	a-	-0.9324	1.1205	0.1734	253.4	88.7	-	24S	9E
-2632 Nov 29	09:40:41	63046	6800	-57280	-36	N	-t	-1.2244	0.6578	-0.4339	236.2	-	-	16N	117E
-2631 May 26	01:43:51	63032	6797	-57274	-31	P	-a	0.8763	1.2368	0.2633	273.4	111.5	-	15S	126W
-2631 Nov 18	14:05:47	63018	6795	-57268	-26	P	-p	-0.4924	1.9747	0.9348	331.0	193.9	-	13N	50E
-2630 May 15	12:05:57	63004	6792	-57262	-21	T+	pp	0.1195	2.6523	1.6253	354.5	226.8	101.0	12S	79E
-2630 Nov 08	01:37:52	62991	6789	-57256	-16	T+	p-	0.2086	2.4694	1.4810	323.4	208.7	88.6	10N	124W
-2629 May 04	15:22:53	62977	6787	-57250	-11	P	t-	-0.6684	1.6644	0.5994	338.1	174.7	-	9S	30E
-2629 Oct 28	17:00:13	62963	6784	-57244	-6	P	a-	0.8622	1.2622	0.2894	265.9	112.5	-	6N	6E

-2628	Mar 24	02:43:01	62952	6782	-57239	-39	N	-t	1.3710	0.3628	-0.6777	175.0	-	-	9N	134W
-2628	Apr 22	16:08:48	62949	6781	-57238	-1	N	t-	-1.4145	0.2914	-0.7657	161.8	-	-	5S	20E
-2628	Sep 17	18:45:03	62938	6779	-57233	-34	N	-a	-1.2109	0.6493	-0.3768	218.4	-	-	12S	18W
-2628	Oct 17	07:32:42	62936	6779	-57232	4	N	a-	1.5564	0.0035	-0.9991	16.6	-	-	3N	148E
-2627	Mar 13	11:34:52	62924	6776	-57227	-29	P	-a	0.5586	1.8269	0.8389	313.2	183.2	-	12N	93E
-2627	Sep 07	00:29:40	62911	6774	-57221	-24	P	-t	-0.5430	1.9008	0.8231	346.6	194.0	-	15S	104W
-2626	Mar 03	02:27:40	62897	6771	-57215	-19	T-	p-	-0.1916	2.4824	1.5299	317.0	208.3	91.1	15N	130W
-2626	Aug 27	00:30:41	62883	6768	-57209	-14	T+	pp	0.1602	2.6111	1.5178	375.8	232.4	98.4	18S	105W
-2625	Feb 20	19:14:24	62869	6766	-57203	-9	P	a-	-0.9071	1.1727	0.2142	260.0	98.6	-	17N	22W
-2625	Aug 16	01:45:41	62856	6763	-57197	-4	P	t-	0.8642	1.3016	0.2436	303.0	114.5	-	20S	124W
-2624	Jan 11	20:29:53	62844	6761	-57192	-37	N	-a	1.0792	0.9000	-0.1440	257.1	-	-	25N	43W
-2624	Jul 06	00:28:27	62830	6758	-57186	-32	N	-a	-1.0987	0.8248	-0.1411	229.6	-	-	25S	107W
-2624	Aug 04	09:59:28	62828	6758	-57185	6	N	a-	1.5280	0.0536	-0.9449	65.0	-	-	21S	112E
-2624	Dec 30	23:37:52	62817	6755	-57180	-27	T	-t	0.3997	2.1714	1.0785	363.3	214.2	45.0	24N	91W
-2623	Jun 25	17:01:11	62803	6753	-57174	-22	T	-p	-0.3583	2.1722	1.2283	308.7	198.2	66.6	23S	4E
-2623	Dec 19	22:51:04	62789	6750	-57168	-17	T	p-	-0.2904	2.3734	1.2778	369.4	223.7	79.0	22N	81W
-2622	Jun 15	09:25:11	62776	6747	-57162	-12	T	p-	0.3829	2.1382	1.1722	317.2	200.3	60.1	20S	117E
-2622	Dec 09	01:46:20	62762	6745	-57156	-7	P	a-	-0.9625	1.1179	0.0664	280.4	60.1	-	19N	126W
-2621	May 06	09:16:29	62750	6742	-57151	-40	Ne	-t	-1.5330	0.0659	-0.9752	77.1	-	-	10S	121E
-2621	Jun 04	21:08:01	62748	6742	-57150	-2	N	t-	1.1918	0.6797	-0.3371	226.5	-	-	17S	58W
-2621	Oct 30	00:25:06	62737	6740	-57145	-35	N	-a	1.1421	0.7519	-0.2271	218.4	-	-	7N	106W
-2620	Apr 24	11:08:36	62723	6737	-57139	-30	P	-t	-0.8059	1.4138	0.3455	322.1	138.4	-	5S	94E
-2620	Oct 18	16:02:22	62709	6734	-57133	-25	P	-a	0.4867	1.9532	0.9765	305.6	185.7	-	2N	20E
-2619	Apr 13	12:33:56	62696	6732	-57127	-20	T-	pp	-0.0312	2.8245	1.7773	364.3	231.8	105.3	0S	74E
-2619	Oct 08	05:31:45	62682	6729	-57121	-15	T-	p-	-0.1929	2.5125	1.4957	336.7	214.9	91.4	3S	178E
-2618	Apr 02	20:00:37	62668	6726	-57115	-10	P	a-	0.7324	1.5120	0.5161	300.4	153.3	-	5N	36W
-2618	Sep 27	12:46:21	62654	6724	-57109	-5	P	t-	-0.9291	1.1896	0.1176	294.7	81.1	-	8S	70E
-2617	Feb 22	02:28:20	62643	6722	-57104	-38	N	-a	-1.1116	0.7937	-0.1574	220.8	-	-	17N	131W
-2617	Mar 23	10:05:41	62641	6721	-57103	0	N	a-	1.4252	0.2193	-0.7339	124.0	-	-	9N	114E
-2617	Aug 17	19:23:45	62629	6719	-57098	-33	N	-t	1.3520	0.4205	-0.6652	194.6	-	-	19S	29W
-2616	Feb 11	18:49:50	62616	6716	-57092	-28	T	-a	-0.4197	2.0729	1.1026	313.0	195.2	47.0	20N	17W
-2616	Aug 05	22:23:36	62602	6714	-57086	-23	P	-t	0.5921	1.7915	0.7521	328.9	183.0	-	22S	75W
-2615	Jan 31	07:07:15	62588	6711	-57080	-18	T	p-	0.3143	2.2935	1.2693	340.3	212.2	74.9	23N	158E
-2615	Jul 26	08:46:37	62575	6708	-57074	-13	T-	p-	-0.1687	2.5389	1.5578	328.6	213.7	94.0	24S	128E
-2614	Jan 20	12:07:49	62561	6706	-57068	-8	N	t-	1.0762	0.9233	-0.1558	271.8	-	-	25N	82E
-2614	Jul 16	00:31:33	62547	6703	-57062	-3	P	a-	-0.8764	1.2243	0.2751	261.8	110.0	-	25S	109W
-2614	Dec 10	17:41:40	62536	6701	-57057	-36	N	-t	-1.2291	0.6472	-0.4407	233.8	-	-	19N	5W
-2613	Jun 06	08:53:09	62522	6698	-57051	-31	P	-a	0.9533	1.0977	0.1199	262.7	77.0	-	18S	125E
-2613	Nov 29	22:34:59	62508	6695	-57045	-26	P	-p	-0.4913	1.9745	0.9389	329.6	193.6	-	17N	79W
-2612	May 25	18:43:03	62495	6693	-57039	-21	T+	pp	0.2045	2.4985	1.4673	354.2	224.2	93.8	15S	23W

-2612 Nov 18	10:27:46	62481	6690	-57033	-16	T+	p-	0.2098	2.4659	1.4798	322.6	208.3	88.4	14N	102E
-2611 May 14	21:37:07	62467	6687	-57027	-11	P	t-	-0.5788	1.8293	0.7632	347.7	191.9	-	12S	66W
-2611 Nov 08	01:54:25	62454	6685	-57021	-6	P	a-	0.8640	1.2593	0.2858	265.9	111.9	-	11N	130W
-2610 Apr 04	09:27:02	62442	6683	-57016	-39	N	-t	1.4409	0.2319	-0.8032	141.0	-	-	5N	121E
-2610 May 03	22:30:32	62440	6682	-57015	-1	N	t-	-1.3266	0.4514	-0.6030	197.8	-	-	9S	79W
-2610 Sep 29	03:02:58	62428	6680	-57010	-34	N	-a	-1.2246	0.6272	-0.4047	216.1	-	-	7S	145W
-2609 Mar 24	18:53:59	62415	6677	-57004	-29	P	-a	0.6214	1.7089	0.7266	306.0	173.2	-	8N	20W
-2609 Sep 18	08:14:31	62401	6675	-56998	-24	P	-t	-0.5650	1.8632	0.7801	346.1	190.6	-	11S	138E
-2608 Mar 13	10:10:00	62387	6672	-56992	-19	T-	p-	-0.1342	2.5858	1.6371	317.5	210.1	95.5	11N	112E
-2608 Sep 06	07:57:56	62374	6669	-56986	-14	T+	pp	0.1298	2.6683	1.5720	376.7	233.3	100.7	14S	141E
-2607 Mar 03	03:02:43	62360	6667	-56980	-9	P	a-	-0.8580	1.2620	0.3048	267.4	116.3	-	14N	141W
-2607 Aug 26	09:20:53	62346	6664	-56974	-4	P	h-	0.8272	1.3696	0.3112	307.6	127.8	-	17S	120E
-2606 Jan 22	04:21:03	62335	6662	-56969	-37	N	-h	1.1092	0.8449	-0.1991	251.4	-	-	25N	162W
-2606 Jul 17	08:07:24	62321	6659	-56963	-32	N	-a	-1.1503	0.7303	-0.2359	217.6	-	-	25S	137E
-2606 Aug 15	17:51:18	62319	6659	-56962	6	N	a-	1.4856	0.1313	-0.8672	100.7	-	-	19S	8W
-2605 Jan 11	07:15:18	62308	6656	-56957	-27	T	-t	0.4236	2.1268	1.0357	362.1	211.9	30.8	24N	153E
-2605 Jul 07	00:40:10	62294	6654	-56951	-22	T	-a	-0.4192	2.0619	1.1154	305.7	193.0	49.0	24S	113W
-2605 Dec 31	06:36:59	62280	6651	-56945	-17	T	p-	-0.2738	2.4016	1.3103	369.0	224.7	82.4	23N	161E
-2604 Jun 25	16:46:39	62267	6649	-56939	-12	T	p-	0.3166	2.2623	1.2915	321.8	205.8	75.2	22S	5E
-2604 Dec 19	10:00:47	62253	6646	-56933	-7	P	a-	-0.9525	1.1335	0.0874	280.7	68.5	-	21N	109E
-2603 Jun 15	03:59:18	62239	6643	-56927	-2	N	t-	1.1219	0.8107	-0.2114	245.3	-	-	20S	163W
-2603 Nov 09	09:17:11	62228	6641	-56922	-35	N	-a	1.1387	0.7575	-0.2203	218.7	-	-	12N	118E
-2602 May 05	17:23:03	62214	6638	-56916	-30	P	-t	-0.8937	1.2525	0.1846	308.7	103.6	-	9S	3W
-2602 Oct 30	00:53:47	62201	6636	-56910	-25	P	-a	0.4863	1.9550	0.9764	306.2	185.9	-	7N	116W
-2601 Apr 24	19:04:42	62187	6633	-56904	-20	T-	pp	-0.1145	2.6697	1.6265	361.9	229.9	102.0	5S	27W
-2601 Oct 19	14:05:17	62173	6630	-56898	-15	T-	p-	-0.1923	2.5158	1.4945	338.2	215.4	91.5	2N	47E
-2600 Apr 13	03:03:40	62160	6628	-56892	-10	P	a-	0.6562	1.6492	0.6585	307.1	168.7	-	0N	145W
-2600 Oct 07	20:51:25	62146	6625	-56886	-5	P	t-	-0.9243	1.2009	0.1240	296.9	83.5	-	3S	54W

## 26TH CENTURY BCE

**In the 26th century BCE the total number of lunar eclipses was 240 lunar eclipses: 84 penumbral lunar eclipses, 94 partial lunar eclipses, 62 total lunar eclipses (48 central total lunar eclipses, 14 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-2599 Mar 04	10:17:06	62135	6623	-56881	-38	N	-a	-1.1626	0.6986	-0.2494	209.0	-	-	13N	109E
-2599 Apr 02	17:32:52	62132	6622	-56880	0	N	a-	1.3577	0.3413	-0.6082	152.5	-	-	5N	1W
-2599 Aug 28	02:45:57	62121	6620	-56875	-33	N	-t	1.3847	0.3617	-0.7262	181.4	-	-	16S	142W
-2598 Feb 22	02:42:16	62107	6618	-56869	-28	T	-a	-0.4659	1.9877	1.0182	310.7	191.0	20.3	17N	137W
-2598 Aug 17	05:58:15	62094	6615	-56863	-23	P	-t	0.6299	1.7222	0.6827	324.2	175.8	-	20S	170E
-2597 Feb 11	14:47:22	62080	6612	-56857	-18	T	p-	0.2752	2.3652	1.3410	343.1	215.6	82.4	21N	42E
-2597 Aug 06	16:36:38	62067	6610	-56851	-13	T-	p-	-0.1240	2.6212	1.6397	328.5	214.4	96.8	22S	10E
-2596 Jan 31	19:31:40	62053	6607	-56845	-8	N	t-	1.0418	0.9856	-0.0919	279.4	-	-	23N	30W
-2596 Jul 26	08:22:49	62039	6604	-56839	-3	P	a-	-0.8255	1.3188	0.3672	268.8	125.4	-	24S	132E
-2596 Dec 21	01:39:25	62028	6602	-56834	-36	N	-t	-1.2369	0.6304	-0.4528	230.4	-	-	21N	126W
-2595 Jun 16	16:04:36	62014	6600	-56828	-31	N	-a	1.0275	0.9639	-0.0189	250.9	-	-	20S	15E
-2595 Jul 16	00:46:34	62012	6599	-56827	7	Nb	a-	-1.5482	0.0003	-0.9659	5.0	-	-	26S	115W
-2595 Dec 10	07:01:23	62001	6597	-56822	-26	P	-a	-0.4934	1.9683	0.9374	328.0	193.0	-	20N	152E
-2594 Jun 06	01:22:38	61987	6594	-56816	-21	T	-t	0.2864	2.3505	1.3147	352.9	220.1	81.8	18S	125W
-2594 Nov 29	19:16:16	61973	6592	-56810	-16	T+	p-	0.2096	2.4651	1.4817	321.7	208.1	88.4	18N	32W
-2593 May 26	03:52:40	61960	6589	-56804	-11	P	t-	-0.4902	1.9926	0.9251	355.8	205.5	-	16S	163W
-2593 Nov 19	10:48:02	61946	6586	-56798	-6	P	a-	0.8654	1.2569	0.2830	265.9	111.5	-	15N	94E
-2592 Apr 14	16:09:09	61935	6584	-56793	-39	Ne	-t	1.5128	0.0975	-0.9326	92.1	-	-	0N	18E
-2592 May 14	04:53:43	61932	6584	-56792	-1	N	t-	-1.2386	0.6116	-0.4403	226.1	-	-	13S	178W
-2592 Oct 09	11:25:28	61921	6582	-56787	-34	N	-a	-1.2343	0.6120	-0.4251	214.7	-	-	3S	87E
-2591 Apr 04	02:08:28	61907	6579	-56781	-29	P	-a	0.6891	1.5820	0.6049	297.7	160.7	-	4N	131W
-2591 Sep 28	16:06:57	61894	6576	-56775	-24	P	-t	-0.5804	1.8373	0.7494	346.0	188.2	-	7S	17E
-2590 Mar 24	17:46:16	61880	6574	-56769	-19	T-	pp	-0.0710	2.7002	1.7547	317.8	211.4	98.4	7N	5W
-2590 Sep 17	15:34:20	61867	6571	-56763	-14	T+	pp	0.1065	2.7123	1.6136	377.1	233.8	102.0	11S	25E
-2589 Mar 14	10:43:07	61853	6568	-56757	-9	P	a-	-0.8027	1.3632	0.4067	275.2	132.6	-	10N	101E
-2589 Sep 06	17:07:33	61839	6566	-56751	-4	P	h-	0.7985	1.4226	0.3638	310.7	136.7	-	14S	2E
-2588 Feb 02	12:00:12	61828	6564	-56746	-37	N	-h	1.1481	0.7735	-0.2702	243.0	-	-	23N	82E
-2588 Jul 27	15:54:50	61814	6561	-56740	-32	N	-a	-1.1957	0.6473	-0.3196	206.1	-	-	25S	19E
-2588 Aug 26	01:54:04	61812	6560	-56739	6	N	a-	1.4512	0.1947	-0.8041	121.6	-	-	17S	130W
-2587 Jan 21	14:41:47	61801	6558	-56734	-27	P	-t	0.4560	2.0661	0.9772	360.0	208.4	-	24N	41E
-2587 Jul 17	08:25:44	61787	6556	-56728	-22	T	-a	-0.4745	1.9620	1.0124	302.7	187.5	16.6	24S	130E
-2586 Jan 10	14:15:10	61774	6553	-56722	-17	T-	p-	-0.2502	2.4424	1.3561	368.7	226.0	86.7	24N	46E
-2586 Jul 07	00:13:09	61760	6550	-56716	-12	T+	p-	0.2552	2.3778	1.4016	325.7	210.0	85.0	23S	108W

-2586	Dec 30	18:11:24	61746	6548	-56710	-7	P	a-	-0.9384	1.1565	0.1163	281.5	78.5	-	23N	14W
-2585	Jun 26	10:51:48	61733	6545	-56704	-2	N	t-	1.0535	0.9391	-0.0888	261.8	-	-	22S	92E
-2585	Nov 20	18:10:34	61721	6543	-56699	-35	N	-a	1.1349	0.7637	-0.2125	219.2	-	-	16N	17W
-2584	May 15	23:36:05	61708	6540	-56693	-30	P	-t	-0.9825	1.0895	0.0217	293.0	36.3	-	13S	99W
-2584	Nov 09	09:46:38	61694	6538	-56687	-25	P	-a	0.4842	1.9595	0.9793	306.9	186.3	-	11N	109E
-2583	May 05	01:35:10	61681	6535	-56681	-20	T-	pp	-0.1989	2.5129	1.4733	358.5	226.2	94.8	9S	128W
-2583	Oct 29	22:41:05	61667	6532	-56675	-15	T-	p-	-0.1943	2.5141	1.4889	339.5	215.8	91.4	6N	84W
-2582	Apr 24	10:06:54	61653	6530	-56669	-10	P	a-	0.5792	1.7883	0.8022	312.7	181.2	-	4S	105E
-2582	Oct 19	04:58:48	61640	6527	-56663	-5	P	t-	-0.9219	1.2073	0.1262	298.5	84.4	-	1N	178W
-2581	Mar 15	18:00:57	61628	6525	-56658	-38	N	-a	-1.2177	0.5961	-0.3492	194.9	-	-	10N	10W
-2581	Apr 14	00:58:32	61626	6525	-56657	0	N	a-	1.2884	0.4669	-0.4795	175.9	-	-	1N	116W
-2581	Sep 08	10:17:28	61615	6522	-56652	-33	N	-t	1.4100	0.3161	-0.7737	170.1	-	-	13S	103E
-2580	Mar 04	10:25:20	61601	6520	-56646	-28	P	-a	-0.5194	1.8894	0.9203	307.7	185.3	-	14N	105E
-2580	Aug 27	13:43:47	61588	6517	-56640	-23	P	-h	0.6596	1.6677	0.6281	320.1	169.6	-	17S	52E
-2579	Feb 21	22:15:33	61574	6514	-56634	-18	T+	pp	0.2272	2.4535	1.4290	346.1	219.1	89.7	18N	72W
-2579	Aug 17	00:37:12	61561	6512	-56628	-13	T-	p-	-0.0872	2.6888	1.7069	328.2	214.6	98.3	20S	112W
-2578	Feb 11	02:43:15	61547	6509	-56622	-8	Nx	t-	0.9980	1.0651	-0.0108	288.5	-	-	21N	139W
-2578	Aug 06	16:23:48	61533	6507	-56616	-3	P	a-	-0.7828	1.3987	0.4443	274.4	136.3	-	23S	11E
-2577	Jan 01	09:30:34	61522	6504	-56611	-36	N	-t	-1.2505	0.6029	-0.4751	225.1	-	-	23N	115E
-2577	Jun 27	23:18:47	61508	6502	-56605	-31	N	-a	1.0984	0.8366	-0.1517	237.9	-	-	22S	96W
-2577	Jul 27	08:30:05	61506	6501	-56604	7	N	a-	-1.5030	0.0859	-0.8857	79.7	-	-	25S	128E
-2577	Dec 21	15:24:00	61495	6499	-56599	-26	P	-a	-0.4994	1.9546	0.9291	325.9	191.9	-	22N	26E
-2576	Jun 16	08:02:59	61481	6497	-56593	-21	T	-t	0.3664	2.2063	1.1655	350.6	214.3	62.6	21S	133E
-2576	Dec 10	04:01:32	61468	6494	-56587	-16	T+	p-	0.2062	2.4696	1.4896	321.0	208.0	88.8	20N	165W
-2575	Jun 05	10:09:40	61454	6491	-56581	-11	T	t-	-0.4027	2.1541	1.0847	362.3	216.0	47.1	19S	101E
-2575	Nov 29	19:40:24	61441	6489	-56575	-6	P	a-	0.8664	1.2550	0.2813	266.0	111.2	-	18N	41W
-2574	May 25	11:19:26	61427	6486	-56569	-1	N	t-	-1.1511	0.7711	-0.2789	249.2	-	-	16S	83E
-2574	Oct 20	19:51:39	61416	6484	-56564	-34	N	-a	-1.2402	0.6034	-0.4383	214.2	-	-	2N	42W
-2573	Apr 15	09:20:58	61402	6481	-56558	-29	P	-a	0.7593	1.4509	0.4784	288.4	145.4	-	0S	117E
-2573	Oct 10	00:05:11	61388	6479	-56552	-24	P	-t	-0.5906	1.8209	0.7287	346.2	186.6	-	2S	105W
-2572	Apr 04	01:16:44	61375	6476	-56546	-19	T-	pp	-0.0027	2.8242	1.8814	317.7	211.8	99.5	3N	121W
-2572	Sep 27	23:19:32	61361	6473	-56540	-14	T+	pp	0.0902	2.7433	1.6426	377.3	233.9	102.8	6S	94W
-2571	Mar 24	18:16:21	61348	6471	-56534	-9	P	a-	-0.7419	1.4746	0.5183	283.1	147.5	-	7N	15W
-2571	Sep 17	01:03:31	61334	6468	-56528	-4	P	a-	0.7765	1.4629	0.4042	312.7	142.8	-	10S	120W
-2570	Feb 12	19:29:17	61323	6466	-56523	-37	N	-h	1.1942	0.6889	-0.3547	232.0	-	-	21N	31W
-2570	Mar 14	07:39:52	61321	6466	-56522	1	Nb	h-	-1.5389	0.0375	-0.9686	55.4	-	-	10N	144E
-2570	Aug 07	23:51:44	61309	6463	-56517	-32	N	-a	-1.2341	0.5774	-0.3905	195.6	-	-	23S	102W
-2570	Sep 06	10:06:11	61307	6463	-56516	6	N	a-	1.4237	0.2452	-0.7536	135.4	-	-	13S	104E
-2569	Feb 01	21:59:34	61296	6461	-56511	-27	P	-t	0.4953	1.9928	0.9064	357.1	203.6	-	23N	70W
-2569	Jul 28	16:17:52	61282	6458	-56505	-22	P	-a	-0.5242	1.8725	0.9194	299.6	181.7	-	24S	11E

-2568	Jan 21	21:45:50	61269	6455	-56499	-17	T-	pp	-0.2197	2.4956	1.4147	368.5	227.5	91.3	23N	68W
-2568	Jul 17	07:45:17	61255	6453	-56493	-12	T+	p-	0.1989	2.4839	1.5020	329.0	213.2	91.6	24S	138E
-2567	Jan 10	02:13:35	61242	6450	-56487	-7	P	a-	-0.9163	1.1939	0.1600	283.5	91.2	-	23N	136W
-2567	Jul 06	17:50:25	61228	6448	-56481	-2	P	t-	0.9906	1.0576	0.0236	275.8	36.4	-	23S	15W
-2567	Dec 01	03:01:08	61217	6445	-56476	-35	N	-a	1.1340	0.7642	-0.2100	218.9	-	-	19N	152W
-2567	Dec 30	13:46:08	61215	6445	-56475	3	N	a-	-1.5469	0.0117	-0.9726	29.6	-	-	22N	50E
-2566	May 27	05:51:41	61203	6443	-56470	-30	N	-t	-1.0688	0.9313	-0.1369	275.4	-	-	17S	164E
-2566	Nov 20	18:37:56	61190	6440	-56464	-25	P	-a	0.4835	1.9614	0.9801	307.5	186.6	-	15N	26W
-2565	May 16	08:07:29	61176	6438	-56458	-20	T	pp	-0.2829	2.3573	1.3208	354.0	220.9	82.6	13S	131E
-2565	Nov 10	07:17:47	61163	6435	-56452	-15	T-	p-	-0.1978	2.5094	1.4809	340.8	216.2	91.1	11N	144E
-2564	May 04	17:07:52	61149	6432	-56446	-10	P	a-	0.4990	1.9333	0.9512	317.7	191.5	-	8S	3W
-2564	Oct 29	13:10:24	61135	6430	-56440	-5	P	t-	-0.9236	1.2061	0.1215	299.4	83.0	-	6N	56E
-2563	Mar 26	01:36:49	61124	6428	-56435	-38	N	-a	-1.2795	0.4816	-0.4615	177.1	-	-	5N	127W
-2563	Apr 24	08:20:12	61122	6427	-56434	0	N	a-	1.2153	0.6000	-0.3441	196.4	-	-	3S	130E
-2563	Sep 18	17:59:29	61111	6425	-56429	-33	N	-t	1.4275	0.2848	-0.8064	161.7	-	-	9S	15W
-2562	Mar 15	18:00:01	61097	6422	-56423	-28	P	-a	-0.5793	1.7795	0.8103	303.7	177.7	-	10N	11W
-2562	Sep 07	21:40:26	61084	6420	-56417	-23	P	-h	0.6813	1.6279	0.5883	316.8	164.7	-	13S	70W
-2561	Mar 05	05:34:45	61070	6417	-56411	-18	T+	pp	0.1726	2.5538	1.5290	348.9	222.3	95.9	14N	176E
-2561	Aug 28	08:46:27	61057	6415	-56405	-13	T-	p-	-0.0571	2.7444	1.7617	327.8	214.5	99.0	18S	124E
-2560	Feb 22	09:45:53	61043	6412	-56399	-8	P	t-	0.9473	1.1573	0.0831	298.1	70.0	-	18N	113E
-2560	Aug 17	00:32:22	61029	6409	-56393	-3	P	a-	-0.7465	1.4668	0.5094	278.9	144.4	-	21S	113W
-2559	Jan 11	17:14:53	61018	6407	-56388	-36	N	-t	-1.2699	0.5644	-0.5079	217.8	-	-	23N	2W
-2559	Jul 08	06:38:15	61005	6405	-56382	-31	N	-a	1.1639	0.7196	-0.2747	224.3	-	-	23S	153E
-2559	Aug 06	16:21:27	61003	6404	-56381	7	N	a-	-1.4648	0.1589	-0.8183	108.0	-	-	24S	9E
-2559	Dec 31	23:41:37	60991	6402	-56376	-26	P	-a	-0.5099	1.9323	0.9126	323.5	190.2	-	23N	100W
-2558	Jun 27	14:47:54	60978	6399	-56370	-21	T	-t	0.4416	2.0709	1.0248	347.7	207.0	25.4	22S	30E
-2558	Dec 21	12:42:11	60964	6397	-56364	-16	T+	p-	0.1987	2.4816	1.5051	320.3	208.1	89.6	23N	64E
-2557	Jun 16	16:31:32	60951	6394	-56358	-11	T	tp	-0.3193	2.3082	1.2366	367.4	223.7	74.8	21S	3E
-2557	Dec 11	04:28:33	60937	6392	-56352	-6	P	a-	0.8640	1.2591	0.2859	266.5	112.2	-	21N	174W
-2556	Jun 04	17:48:58	60924	6389	-56346	-1	N	t-	-1.0654	0.9276	-0.1209	268.2	-	-	19S	17W
-2556	Oct 31	04:19:49	60912	6387	-56341	-34	N	-a	-1.2439	0.5987	-0.4469	214.3	-	-	6N	172W
-2555	Apr 25	16:31:31	60899	6384	-56335	-29	P	-a	0.8318	1.3158	0.3473	277.9	125.9	-	4S	6E
-2555	Oct 20	08:06:53	60885	6382	-56329	-24	P	-t	-0.5972	1.8104	0.7149	346.6	185.6	-	2N	131E
-2554	Apr 15	08:43:44	60872	6379	-56323	-19	T+	pp	0.0688	2.7018	1.7610	317.0	211.2	98.5	1S	124E
-2554	Oct 09	07:12:17	60858	6376	-56317	-14	T+	pp	0.0799	2.7627	1.6608	377.3	233.9	103.1	2S	145E
-2553	Apr 05	01:42:26	60845	6374	-56311	-9	P	a-	-0.6756	1.5964	0.6398	290.9	161.1	-	2N	130W
-2553	Sep 28	09:09:00	60831	6371	-56305	-4	P	a-	0.7613	1.4905	0.4322	313.7	146.6	-	6S	116E
-2552	Feb 24	02:46:43	60820	6369	-56300	-37	N	-t	1.2487	0.5888	-0.4546	217.3	-	-	18N	143W
-2552	Mar 24	14:49:22	60818	6369	-56299	1	N	t-	-1.4796	0.1468	-0.8604	109.1	-	-	6N	34E
-2552	Aug 18	07:58:07	60807	6366	-56294	-32	N	-a	-1.2657	0.5201	-0.4490	186.4	-	-	21S	135E

-2552	Sep 16	18:28:15	60804	6366	-56293	6	N	a-	1.4033	0.2826	-0.7162	144.5	-	-	9S	23W
-2551	Feb 12	05:05:06	60793	6364	-56288	-27	P	-t	0.5444	1.9013	0.8177	353.0	196.7	-	20N	178W
-2551	Aug 08	00:18:36	60780	6361	-56282	-22	P	-a	-0.5668	1.7962	0.8394	296.9	176.1	-	23S	111W
-2550	Feb 01	05:08:22	60766	6359	-56276	-17	T-	pp	-0.1816	2.5627	1.4875	368.2	229.1	96.0	22N	180W
-2550	Jul 28	15:23:17	60753	6356	-56270	-12	T+	pp	0.1483	2.5799	1.5919	331.8	215.5	95.8	23S	22E
-2549	Jan 21	10:10:36	60739	6353	-56264	-7	P	a-	-0.8889	1.2409	0.2135	286.2	104.3	-	23N	104E
-2549	Jul 18	00:53:22	60725	6351	-56258	-2	P	t-	0.9316	1.1690	0.1286	287.8	84.0	-	23S	122W
-2549	Dec 12	11:49:25	60714	6349	-56253	-35	N	-a	1.1353	0.7606	-0.2111	218.2	-	-	22N	75E
-2548	Jan 10	22:11:56	60712	6348	-56252	3	N	a-	-1.5279	0.0441	-0.9352	57.1	-	-	22N	78W
-2548	Jun 06	12:08:46	60701	6346	-56247	-30	N	-t	-1.1536	0.7761	-0.2927	255.3	-	-	20S	68E
-2548	Dec 01	03:27:42	60687	6344	-56241	-25	P	-a	0.4837	1.9614	0.9795	308.0	186.9	-	18N	160W
-2547	May 26	14:43:20	60674	6341	-56235	-20	T	-t	-0.3648	2.2058	1.1718	348.7	213.9	63.5	16S	29E
-2547	Nov 20	15:52:16	60660	6338	-56229	-15	T-	p-	-0.2003	2.5062	1.4751	342.0	216.6	91.0	14N	13E
-2546	May 16	00:12:29	60647	6336	-56223	-10	T	a-	0.4208	2.0752	1.0964	321.5	199.6	46.6	12S	112W
-2546	Nov 09	21:21:43	60633	6333	-56217	-5	P	t-	-0.9254	1.2040	0.1168	300.0	81.6	-	10N	69W
-2545	Apr 06	09:08:42	60622	6331	-56212	-38	N	-a	-1.3445	0.3616	-0.5799	155.2	-	-	1N	117E
-2545	May 05	15:41:36	60620	6331	-56211	0	N	a-	1.1414	0.7345	-0.2078	214.0	-	-	8S	16E
-2545	Sep 30	01:49:12	60609	6328	-56206	-33	N	-t	1.4391	0.2640	-0.8281	155.8	-	-	5S	135W
-2544	Mar 26	01:27:13	60595	6326	-56200	-28	P	-a	-0.6448	1.6596	0.6900	298.7	167.8	-	6N	126W
-2544	Sep 18	05:46:48	60582	6323	-56194	-23	P	-a	0.6957	1.6013	0.5622	314.2	161.2	-	10S	166E
-2543	Mar 15	12:42:41	60568	6321	-56188	-18	T+	pp	0.1099	2.6693	1.6437	351.5	225.1	100.7	11N	66E
-2543	Sep 07	17:06:08	60555	6318	-56182	-13	T-	pp	-0.0353	2.7848	1.8016	327.2	214.2	99.2	14S	3W
-2542	Mar 04	16:37:41	60541	6315	-56176	-8	P	t-	0.8883	1.2646	0.1921	308.3	104.9	-	15N	8E
-2542	Aug 28	08:49:42	60528	6313	-56170	-3	P	a-	-0.7177	1.5212	0.5607	282.4	150.3	-	18S	121E
-2541	Jan 23	00:51:11	60517	6311	-56165	-36	N	-t	-1.2961	0.5132	-0.5529	207.8	-	-	22N	117W
-2541	Jul 19	14:03:18	60503	6308	-56159	-31	N	-a	1.2234	0.6135	-0.3871	210.3	-	-	23S	40E
-2541	Aug 18	00:20:37	60501	6308	-56158	7	N	a-	-1.4335	0.2192	-0.7639	126.6	-	-	22S	112W
-2540	Jan 12	07:51:47	60490	6306	-56153	-26	P	-a	-0.5277	1.8965	0.8831	320.5	187.6	-	23N	137E
-2540	Jul 07	21:36:34	60476	6303	-56147	-21	P	-t	0.5128	1.9432	0.8913	344.1	198.4	-	23S	74W
-2540	Dec 31	21:17:05	60463	6300	-56141	-16	T+	p-	0.1860	2.5028	1.5303	319.8	208.4	90.8	24N	66W
-2539	Jun 26	22:58:30	60449	6298	-56135	-11	T-	pp	-0.2398	2.4555	1.3813	371.2	229.2	89.9	23S	95W
-2539	Dec 21	13:11:35	60436	6295	-56129	-6	P	a-	0.8579	1.2699	0.2977	267.6	114.4	-	23N	54E
-2538	Jun 16	00:24:38	60422	6293	-56123	-1	P	t-	-0.9833	1.0776	0.0302	283.7	41.9	-	22S	118W
-2538	Nov 11	12:49:04	60411	6290	-56118	-34	N	-a	-1.2459	0.5968	-0.4522	214.8	-	-	10N	58E
-2537	May 06	23:41:23	60398	6288	-56112	-29	P	-a	0.9057	1.1785	0.2135	266.1	100.4	-	8S	104W
-2537	Oct 31	16:12:02	60384	6285	-56106	-24	P	-t	-0.6006	1.8054	0.7072	347.2	185.1	-	7N	8E
-2536	Apr 25	16:07:41	60371	6283	-56100	-19	T+	-p	0.1430	2.5651	1.6256	315.7	209.6	95.1	5S	10E
-2536	Oct 19	15:10:34	60357	6280	-56094	-14	T+	pp	0.0735	2.7747	1.6724	377.0	233.8	103.2	3N	23E
-2535	Apr 15	09:03:27	60344	6278	-56088	-9	P	a-	-0.6055	1.7255	0.7681	298.4	173.3	-	2S	116E
-2535	Oct 08	17:21:56	60330	6275	-56082	-4	P	a-	0.7513	1.5084	0.4511	313.9	148.9	-	1S	10W

-2534	Mar 06	09:55:18	60319	6273	-56077	-37	N	-t	1.3095	0.4772	-0.5663	198.3	-	-	15N	108E
-2534	Apr 04	21:52:58	60317	6272	-56076	1	N	t-	-1.4159	0.2644	-0.7444	145.4	-	-	2N	75W
-2534	Aug 29	16:12:39	60306	6270	-56071	-32	N	-a	-1.2914	0.4735	-0.4969	178.4	-	-	18S	10E
-2534	Sep 28	02:56:51	60304	6270	-56070	6	N	a-	1.3875	0.3114	-0.6871	150.8	-	-	5S	153W
-2533	Feb 23	12:02:17	60292	6268	-56065	-27	P	-t	0.6001	1.7978	0.7169	347.8	187.6	-	18N	76E
-2533	Aug 19	08:27:02	60279	6265	-56059	-22	P	-a	-0.6031	1.7316	0.7707	294.5	170.8	-	20S	125E
-2532	Feb 12	12:21:15	60265	6263	-56053	-17	T-	pp	-0.1349	2.6455	1.5761	367.8	230.6	100.2	20N	71E
-2532	Aug 07	23:08:50	60252	6260	-56047	-12	T+	pp	0.1046	2.6632	1.6689	334.2	217.2	98.4	22S	96W
-2531	Jan 31	17:58:20	60239	6257	-56041	-7	P	a-	-0.8528	1.3036	0.2830	289.8	118.5	-	21N	14W
-2531	Jul 28	08:04:27	60225	6255	-56035	-2	P	t-	0.8799	1.2671	0.2203	297.9	108.8	-	23S	129E
-2531	Dec 22	20:30:59	60214	6253	-56030	-35	N	-a	1.1426	0.7458	-0.2231	216.1	-	-	24N	57W
-2530	Jan 21	06:28:47	60212	6252	-56029	3	N	a-	-1.5012	0.0905	-0.8837	81.3	-	-	22N	157E
-2530	Jun 17	18:32:25	60200	6250	-56024	-30	N	-t	-1.2330	0.6309	-0.4391	233.4	-	-	22S	30W
-2530	Dec 12	12:13:06	60187	6247	-56018	-25	P	-a	0.4874	1.9546	0.9725	308.4	186.8	-	21N	67E
-2529	Jun 06	21:22:43	60174	6245	-56012	-20	T	-t	-0.4448	2.0579	1.0261	342.4	205.2	25.8	19S	73W
-2529	Dec 02	00:24:36	60160	6242	-56006	-15	T-	p-	-0.2015	2.5049	1.4717	343.2	217.2	91.0	18N	117W
-2528	May 26	07:18:12	60147	6240	-56000	-10	T	a-	0.3421	2.2182	1.2421	324.4	205.8	70.4	15S	138E
-2528	Nov 20	05:32:27	60133	6237	-55994	-5	P	t-	-0.9273	1.2015	0.1125	300.6	80.4	-	14N	166E
-2527	Apr 16	16:34:54	60122	6235	-55989	-38	N	-a	-1.4140	0.2335	-0.7071	126.3	-	-	3S	2E
-2527	May 15	23:02:12	60120	6235	-55988	0	N	a-	1.0664	0.8717	-0.0696	229.6	-	-	11S	97W
-2527	Oct 10	09:47:49	60109	6232	-55983	-33	N	-t	1.4442	0.2547	-0.8376	152.9	-	-	0S	103E
-2526	Apr 06	08:47:53	60095	6230	-55977	-28	P	-a	-0.7148	1.5316	0.5609	292.4	154.9	-	2N	120E
-2526	Sep 29	14:01:29	60082	6227	-55971	-23	P	-a	0.7042	1.5853	0.5469	312.2	158.9	-	5S	40E
-2525	Mar 26	19:43:00	60068	6225	-55965	-18	T+	pp	0.0417	2.7948	1.7683	353.5	227.0	103.6	7N	42W
-2525	Sep 19	01:34:00	60055	6222	-55959	-13	T-	pp	-0.0197	2.8136	1.8300	326.5	213.8	99.1	10S	132W
-2524	Mar 14	23:19:47	60042	6220	-55953	-8	P	t-	0.8217	1.3861	0.3151	318.8	132.2	-	11N	95W
-2524	Sep 07	17:14:55	60028	6217	-55947	-3	P	a-	-0.6956	1.5634	0.5997	285.1	154.5	-	15S	7W
-2523	Feb 02	08:19:51	60017	6215	-55942	-36	N	-t	-1.3290	0.4497	-0.6100	194.9	-	-	21N	130E
-2523	Mar 03	23:36:53	60015	6214	-55941	2	Nb	t-	1.5459	0.0572	-1.0134	73.6	-	-	16N	99W
-2523	Jul 29	21:34:49	60004	6212	-55936	-31	N	-a	1.2769	0.5186	-0.4885	196.1	-	-	22S	74W
-2523	Aug 28	08:26:58	60001	6212	-55935	7	N	a-	-1.4086	0.2678	-0.7211	139.9	-	-	19S	125E
-2522	Jan 22	15:55:15	59990	6210	-55930	-26	P	-a	-0.5518	1.8492	0.8420	317.0	184.0	-	23N	15E
-2522	Jul 19	04:32:23	59977	6207	-55924	-21	P	-t	0.5772	1.8281	0.7703	340.2	188.9	-	23S	179W
-2521	Jan 12	05:45:40	59963	6205	-55918	-16	T+	p-	0.1678	2.5342	1.5658	319.4	209.0	92.4	24N	166E
-2521	Jul 08	05:31:40	59950	6202	-55912	-11	T-	pp	-0.1652	2.5935	1.5167	373.8	232.8	98.8	24S	165E
-2520	Jan 01	21:48:04	59937	6199	-55906	-6	P	a-	0.8469	1.2895	0.3184	269.3	118.1	-	25N	76W
-2520	Jun 26	07:07:37	59923	6197	-55900	-1	P	t-	-0.9063	1.2186	0.1720	296.2	97.6	-	24S	140E
-2520	Nov 21	21:15:26	59912	6195	-55895	-34	N	-a	-1.2494	0.5916	-0.4600	214.8	-	-	14N	70W
-2519	May 17	06:52:52	59899	6192	-55889	-29	P	-a	0.9788	1.0430	0.0806	253.2	62.6	-	12S	145E
-2519	Nov 11	00:17:21	59885	6190	-55883	-24	P	-t	-0.6031	1.8018	0.7018	347.7	184.9	-	11N	116W



-2518 May 06	23:30:33	59872	6187	-55877	-19	T+	-p	0.2182	2.4267	1.4878	313.7	206.8	88.9	9S	104W
-2518 Oct 30	23:12:22	59858	6185	-55871	-14	T+	pp	0.0697	2.7815	1.6795	376.6	233.6	103.3	7N	100W
-2517 Apr 26	16:19:59	59845	6182	-55865	-9	P	a-	-0.5323	1.8606	0.9016	305.4	183.9	-	6S	4E
-2517 Oct 20	01:41:53	59832	6179	-55859	-4	P	a-	0.7461	1.5171	0.4613	313.4	149.9	-	3N	137W
-2516 Mar 16	16:51:36	59820	6177	-55854	-37	N	-t	1.3789	0.3499	-0.6938	172.4	-	-	11N	1E
-2516 Apr 15	04:47:12	59818	6177	-55853	1	N	t-	-1.3457	0.3944	-0.6165	176.2	-	-	2S	178E
-2516 Sep 09	00:37:01	59807	6175	-55848	-32	N	-a	-1.3099	0.4403	-0.5314	172.3	-	-	15S	118W
-2516 Oct 08	11:33:57	59805	6174	-55847	6	N	a-	1.3781	0.3284	-0.6695	154.2	-	-	1S	75E
-2515 Mar 05	18:48:30	59794	6172	-55842	-27	P	-t	0.6642	1.6787	0.6006	341.0	175.2	-	14N	28W
-2515 Aug 29	16:43:53	59780	6170	-55836	-22	P	-a	-0.6321	1.6805	0.7155	292.5	166.3	-	17S	1W
-2514 Feb 22	19:26:45	59767	6167	-55830	-17	T-	pp	-0.0814	2.7405	1.6771	367.1	231.6	103.4	17N	38W
-2514 Aug 19	07:01:57	59753	6164	-55824	-12	T+	pp	0.0682	2.7332	1.7325	336.3	218.3	99.9	20S	144E
-2513 Feb 12	01:40:17	59740	6162	-55818	-7	P	a-	-0.8111	1.3767	0.3629	293.9	132.1	-	19N	131W
-2513 Aug 08	15:21:01	59727	6159	-55812	-2	P	t-	0.8334	1.3557	0.3023	306.5	126.3	-	21S	19E
-2512 Jan 03	05:08:21	59715	6157	-55807	-35	N	-a	1.1536	0.7241	-0.2418	213.1	-	-	25N	173E
-2512 Feb 01	14:39:42	59713	6157	-55806	3	N	a-	-1.4695	0.1461	-0.8230	102.4	-	-	21N	33E
-2512 Jun 28	01:01:27	59702	6155	-55801	-30	N	-t	-1.3080	0.4939	-0.5774	209.1	-	-	24S	129W
-2512 Dec 22	20:52:51	59689	6152	-55795	-25	P	-a	0.4955	1.9397	0.9578	308.4	186.2	-	23N	64W
-2511 Jun 17	04:09:26	59675	6150	-55789	-20	P	-t	-0.5196	1.9198	0.8896	335.6	195.3	-	22S	177W
-2511 Dec 12	08:51:39	59662	6147	-55783	-15	T-	p-	-0.1990	2.5103	1.4756	344.5	217.9	91.5	21N	115E
-2510 Jun 06	14:29:24	59649	6144	-55777	-10	T+	p-	0.2672	2.3546	1.3806	326.3	210.2	83.8	19S	28E
-2510 Dec 01	13:39:08	59635	6142	-55771	-5	P	t-	-0.9264	1.2037	0.1136	301.5	80.9	-	17N	43E
-2509 Apr 27	23:59:29	59624	6140	-55766	-38	Ne	-a	-1.4847	0.1037	-0.8367	85.2	-	-	7S	112W
-2509 May 27	06:25:11	59622	6139	-55765	0	P	a-	0.9930	1.0063	0.0653	242.9	55.3	-	15S	150E
-2509 Oct 21	17:51:23	59611	6137	-55760	-33	N	-t	1.4456	0.2519	-0.8399	151.8	-	-	4N	21W
-2508 Apr 16	16:01:31	59597	6135	-55754	-28	P	-a	-0.7897	1.3951	0.4228	284.6	137.8	-	3S	9E
-2508 Oct 09	22:23:50	59584	6132	-55748	-23	P	-a	0.7071	1.5793	0.5421	310.8	157.8	-	1S	88W
-2507 Apr 06	02:34:23	59571	6130	-55742	-18	T-	pp	-0.0326	2.8123	1.7842	355.0	227.8	104.1	2N	148W
-2507 Sep 29	10:09:21	59557	6127	-55736	-13	T-	pp	-0.0099	2.8316	1.8477	325.9	213.3	99.0	6S	96E
-2506 Mar 26	05:53:20	59544	6124	-55730	-8	P	t-	0.7484	1.5199	0.4501	329.0	155.0	-	7N	163E
-2506 Sep 19	01:48:20	59531	6122	-55724	-3	P	a-	-0.6805	1.5926	0.6259	287.0	157.2	-	11S	138W
-2505 Feb 13	15:39:52	59519	6120	-55719	-36	N	-t	-1.3691	0.3727	-0.6805	177.9	-	-	18N	18E
-2505 Mar 15	06:20:39	59517	6119	-55718	2	N	t-	1.4782	0.1789	-0.8867	128.5	-	-	12N	157E
-2505 Aug 10	05:12:52	59506	6117	-55713	-31	N	-a	1.3238	0.4360	-0.5779	182.1	-	-	20S	170E
-2505 Sep 08	16:41:03	59504	6117	-55712	7	N	a-	-1.3907	0.3035	-0.6911	149.0	-	-	15S	1W
-2504 Feb 02	23:50:50	59493	6115	-55707	-26	P	-a	-0.5830	1.7886	0.7880	312.6	179.1	-	21N	105W
-2504 Jul 29	11:34:53	59479	6112	-55701	-21	P	-t	0.6348	1.7254	0.6615	336.2	178.8	-	23S	74E
-2503 Jan 22	14:05:40	59466	6110	-55695	-16	T+	p-	0.1424	2.5787	1.6145	319.2	209.6	94.3	23N	40E
-2503 Jul 18	12:13:32	59453	6107	-55689	-11	T-	pp	-0.0979	2.7185	1.6387	375.4	234.8	103.6	24S	63E
-2502 Jan 12	06:17:42	59439	6104	-55683	-6	P	a-	0.8311	1.3177	0.3480	271.7	123.1	-	25N	156E

-2502 Jul 07	13:58:07	59426	6102	-55677	-1	P	t-	-0.8343	1.3506	0.3043	306.3	127.0	-	25S	36E
-2502 Dec 03	05:39:16	59415	6100	-55672	-34	N	-a	-1.2541	0.5839	-0.4696	214.3	-	-	17N	162E
-2501 May 28	14:06:23	59402	6097	-55666	-29	N	-a	1.0507	0.9101	-0.0502	239.1	-	-	15S	34E
-2501 Jun 26	22:33:39	59399	6097	-55665	9	Nb	a-	-1.5261	0.0521	-0.9366	64.1	-	-	24S	94W
-2501 Nov 22	08:22:11	59388	6095	-55660	-24	P	-t	-0.6058	1.7973	0.6964	348.0	184.6	-	15N	121E
-2500 May 17	06:52:05	59375	6092	-55654	-19	T	-p	0.2946	2.2865	1.3476	311.1	202.8	79.0	13S	142E
-2500 Nov 10	07:16:46	59361	6090	-55648	-14	T+	pp	0.0676	2.7848	1.6839	376.0	233.3	103.3	11N	137E

# 25TH CENTURY BCE

In the 25th century BCE the total number of lunar eclipses was 256 lunar eclipses: 99 penumbral lunar eclipses, 97 partial lunar eclipses, 60 total lunar eclipses (47 central total lunar eclipses, 13 non-central total lunar eclipses).

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
	ECLIPSE														
-2499 May 06	23:34:11	59348	6087	-55642	-9	T	a-	-0.4577	1.9986	1.0373	311.8	193.0	29.1	10S	108W
-2499 Oct 30	10:04:49	59335	6085	-55636	-4	P	a-	0.7426	1.5225	0.4690	312.7	150.5	-	8N	94E
-2498 Mar 27	23:41:02	59324	6082	-55631	-37	N	-t	1.4526	0.2151	-0.8293	137.3	-	-	7N	104W
-2498 Apr 26	11:38:21	59321	6082	-55630	1	N	t-	-1.2735	0.5282	-0.4853	202.1	-	-	7S	72E
-2498 Sep 20	09:08:52	59310	6080	-55625	-32	N	-a	-1.3228	0.4172	-0.5556	167.9	-	-	11S	111E
-2498 Oct 19	20:15:29	59308	6079	-55624	6	N	a-	1.3719	0.3391	-0.6577	156.1	-	-	4N	58W
-2497 Mar 17	01:26:53	59297	6077	-55619	-27	P	-t	0.7344	1.5485	0.4731	332.5	158.8	-	11N	130W
-2497 Sep 10	01:08:01	59284	6075	-55613	-22	P	-a	-0.6549	1.6406	0.6716	291.1	162.4	-	14S	129W
-2496 Mar 05	02:24:03	59270	6072	-55607	-17	T-	pp	-0.0205	2.8494	1.7919	366.0	231.9	105.0	14N	144W
-2496 Aug 29	15:03:01	59257	6070	-55601	-12	T+	pp	0.0389	2.7901	1.7830	338.2	219.1	100.7	17S	22E

-2495	Feb 22	09:12:49	59244	6067	-55595	-7	P	a-	-0.7604	1.4663	0.4592	298.7	146.0	-	17N	113E
-2495	Aug 18	22:47:27	59230	6065	-55589	-2	P	t-	0.7954	1.4288	0.3688	313.4	138.5	-	19S	94W
-2494	Jan 13	13:37:29	59219	6062	-55584	-35	N	-a	1.1720	0.6887	-0.2740	208.4	-	-	25N	45E
-2494	Feb 11	22:41:47	59217	6062	-55583	3	N	a-	-1.4301	0.2160	-0.7482	123.4	-	-	19N	89W
-2494	Jul 09	07:38:30	59206	6060	-55578	-30	N	-t	-1.3767	0.3688	-0.7041	182.6	-	-	25S	130E
-2494	Aug 08	00:00:30	59204	6060	-55577	8	N	t-	1.5367	0.0820	-1.0045	89.0	-	-	21S	114W
-2493	Jan 03	05:25:24	59193	6057	-55572	-25	P	-a	0.5094	1.9140	0.9326	308.0	185.0	-	24N	167E
-2493	Jun 28	11:02:37	59179	6055	-55566	-20	P	-t	-0.5903	1.7895	0.7605	328.2	184.1	-	23S	78E
-2493	Dec 23	17:12:10	59166	6052	-55560	-15	T-	pp	-0.1920	2.5236	1.4879	345.9	218.9	92.4	23N	11W
-2492	Jun 16	21:44:10	59153	6050	-55554	-10	T+	p-	0.1944	2.4875	1.5149	327.5	213.2	92.3	21S	82W
-2492	Dec 11	21:41:43	59139	6047	-55548	-5	P	t-	-0.9226	1.2108	0.1204	302.7	83.4	-	20N	80W
-2491	Jun 06	13:49:58	59126	6045	-55542	0	P	a-	0.9209	1.1388	0.1973	254.6	94.3	-	18S	36E
-2491	Nov 01	01:59:08	59115	6043	-55537	-33	N	-t	1.4441	0.2541	-0.8365	152.0	-	-	9N	145W
-2490	Apr 27	23:11:23	59102	6040	-55531	-28	P	-a	-0.8666	1.2550	0.2804	275.4	115.0	-	7S	102W
-2490	Oct 21	06:52:26	59088	6038	-55525	-23	P	-a	0.7058	1.5808	0.5453	309.8	157.7	-	4N	142E
-2489	Apr 17	09:19:03	59075	6035	-55519	-18	T-	pp	-0.1115	2.6685	1.6386	355.5	227.2	101.5	2S	107E
-2489	Oct 10	18:51:11	59062	6032	-55513	-13	T-	pp	-0.0051	2.8404	1.8565	325.2	212.9	98.8	1S	37W
-2488	Apr 05	12:20:07	59048	6030	-55507	-8	P	t-	0.6696	1.6639	0.5953	338.6	174.3	-	3N	63E
-2488	Sep 29	10:27:58	59035	6027	-55501	-3	P	a-	-0.6709	1.6117	0.6421	288.4	158.9	-	6S	89E
-2487	Feb 23	22:52:33	59024	6025	-55496	-36	N	-t	-1.4155	0.2843	-0.7624	156.0	-	-	15N	92W
-2487	Mar 25	12:58:55	59022	6025	-55495	2	N	t-	1.4051	0.3106	-0.7502	166.7	-	-	8N	55E
-2487	Aug 20	12:58:55	59011	6023	-55490	-31	N	-a	1.3632	0.3671	-0.6535	169.0	-	-	18S	52E
-2487	Sep 19	01:02:02	59008	6022	-55489	7	N	a-	-1.3791	0.3277	-0.6725	155.1	-	-	11S	128W
-2486	Feb 13	07:40:06	58997	6020	-55484	-26	P	-a	-0.6201	1.7173	0.7231	307.7	173.0	-	19N	136E
-2486	Aug 09	18:44:37	58984	6018	-55478	-21	P	-t	0.6856	1.6353	0.5654	332.2	168.3	-	21S	35W
-2485	Feb 02	22:18:43	58971	6015	-55472	-16	T+	p-	0.1109	2.6343	1.6744	319.0	210.4	96.2	22N	84W
-2485	Jul 29	19:04:12	58958	6013	-55466	-11	T-	pp	-0.0380	2.8300	1.7473	376.2	235.6	105.6	23S	41W
-2484	Jan 23	14:37:36	58944	6010	-55460	-6	P	a-	0.8077	1.3600	0.3917	275.0	130.0	-	24N	30E
-2484	Jul 17	20:58:42	58931	6008	-55454	-1	P	t-	-0.7694	1.4696	0.4234	314.2	146.7	-	25S	70W
-2484	Dec 13	13:56:37	58920	6005	-55449	-34	N	-a	-1.2632	0.5679	-0.4869	212.3	-	-	20N	36E

-2483 Jan 12	03:55:55	58918	6005	-55448	4	N	a-	1.5577	0.0082	-1.0084	25.9	-	-	25N	171W
-2483 Jun 07	21:24:40	58907	6003	-55443	-29	N	-a	1.1194	0.7834	-0.1756	224.1	-	-	18S	78W
-2483 Jul 07	05:55:33	58904	6003	-55442	9	N	a-	-1.4601	0.1728	-0.8150	115.0	-	-	25S	154E
-2483 Dec 02	16:22:21	58893	6000	-55437	-24	P	-t	-0.6118	1.7864	0.6854	347.8	183.7	-	18N	1W
-2482 May 28	14:15:49	58880	5998	-55431	-19	T	-a	0.3692	2.1502	1.2104	307.8	197.6	64.3	16S	29E
-2482 Nov 21	15:21:33	58867	5995	-55425	-14	T+	pp	0.0655	2.7876	1.6888	375.2	233.1	103.3	15N	13E
-2481 May 18	06:45:13	58853	5993	-55419	-9	T	p-	-0.3812	2.1404	1.1762	317.5	200.8	60.8	14S	142E
-2481 Nov 10	18:31:53	58840	5990	-55413	-4	P	a-	0.7417	1.5227	0.4720	311.5	150.4	-	12N	35W
-2480 Apr 07	06:20:57	58829	5988	-55408	-37	Ne	-t	1.5323	0.0694	-0.9760	79.2	-	-	3N	152E
-2480 May 06	18:23:39	58827	5988	-55407	1	N	t-	-1.1976	0.6691	-0.3477	225.4	-	-	10S	33W
-2480 Sep 30	17:48:52	58816	5986	-55402	-32	N	-a	-1.3299	0.4046	-0.5691	165.3	-	-	6S	21W
-2480 Oct 30	05:01:50	58814	5985	-55401	6	N	a-	1.3693	0.3432	-0.6521	156.6	-	-	8N	168E
-2479 Mar 27	07:56:37	58802	5983	-55396	-27	P	-t	0.8113	1.4063	0.3332	322.0	136.2	-	7N	129E
-2479 Sep 20	09:40:23	58789	5981	-55390	-22	P	-a	-0.6708	1.6136	0.6407	290.3	159.6	-	10S	101E
-2478 Mar 16	09:15:50	58776	5978	-55384	-17	T+	pp	0.0460	2.7997	1.7480	364.2	231.2	104.6	10N	110E
-2478 Sep 09	23:10:35	58763	5976	-55378	-12	T+	pp	0.0159	2.8355	1.8221	340.0	219.7	101.0	13S	102W
-2477 Mar 05	16:40:34	58749	5973	-55372	-7	P	a-	-0.7048	1.5651	0.5645	303.4	158.7	-	13N	1W
-2477 Aug 30	06:20:33	58736	5971	-55366	-2	P	t-	0.7634	1.4907	0.4243	319.3	147.7	-	16S	150E
-2476 Jan 24	21:59:06	58725	5968	-55361	-35	N	-a	1.1967	0.6418	-0.3175	201.9	-	-	24N	81W
-2476 Feb 23	06:36:08	58723	5968	-55360	3	N	a-	-1.3841	0.2979	-0.6615	143.4	-	-	16N	150E
-2476 Jul 19	14:23:37	58712	5966	-55355	-30	N	-t	-1.4388	0.2557	-0.8189	153.5	-	-	25S	28E
-2476 Aug 18	07:08:33	58710	5966	-55354	8	N	t-	1.4929	0.1644	-0.9260	125.3	-	-	18S	138E
-2475 Jan 13	13:50:04	58699	5963	-55349	-25	P	-a	0.5293	1.8771	0.8963	307.1	182.9	-	24N	40E
-2475 Jul 08	18:05:05	58685	5961	-55343	-20	P	-t	-0.6540	1.6722	0.6441	320.8	172.1	-	24S	29W
-2474 Jan 03	01:24:00	58672	5958	-55337	-15	T-	pp	-0.1788	2.5483	1.5120	347.4	220.1	94.0	24N	135W
-2474 Jun 28	05:06:51	58659	5956	-55331	-10	T+	p-	0.1273	2.6100	1.6384	327.9	214.9	97.2	23S	165E
-2474 Dec 23	05:37:04	58645	5953	-55325	-5	P	t-	-0.9135	1.2273	0.1373	304.8	89.0	-	22N	160E
-2473 Jun 17	21:18:18	58632	5951	-55319	0	P	a-	0.8516	1.2664	0.3239	264.5	118.6	-	20S	78W
-2473 Nov 12	10:08:50	58621	5949	-55314	-33	N	-t	1.4415	0.2577	-0.8307	152.7	-	-	13N	90E
-2472 May 08	06:17:24	58608	5946	-55308	-28	P	-a	-0.9459	1.1111	0.1335	264.3	81.3	-	11S	148E

-2472	Oct 31	15:24:23	58595	5944	-55302	-23	P	-a	0.7026	1.5855	0.5525	308.9	158.1	-	8N	12E
-2471	Apr 27	15:58:03	58581	5941	-55296	-18	T-	pp	-0.1939	2.5185	1.4861	355.2	225.0	95.0	6S	4E
-2471	Oct 21	03:38:08	58568	5939	-55290	-13	T-	pp	-0.0040	2.8421	1.8588	324.6	212.6	98.7	3N	171W
-2470	Apr 16	18:41:08	58555	5936	-55284	-8	P	t-	0.5863	1.8164	0.7485	347.4	190.6	-	1S	35W
-2470	Oct 10	19:13:07	58542	5934	-55278	-3	P	a-	-0.6662	1.6216	0.6495	289.3	159.7	-	2S	44W
-2469	Mar 07	05:57:53	58531	5932	-55273	-36	N	-t	-1.4683	0.1843	-0.8560	126.1	-	-	12N	159E
-2469	Apr 05	19:31:39	58528	5931	-55272	2	N	t-	1.3264	0.4528	-0.6036	198.0	-	-	4N	47W
-2469	Aug 31	20:52:31	58517	5929	-55267	-31	N	-a	1.3954	0.3115	-0.7158	157.3	-	-	15S	69W
-2469	Sep 30	09:29:47	58515	5929	-55266	7	N	a-	-1.3738	0.3400	-0.6654	158.4	-	-	7S	102E
-2468	Feb 24	15:20:03	58504	5926	-55261	-26	P	-a	-0.6656	1.6307	0.6428	301.6	164.8	-	16N	19E
-2468	Aug 20	02:03:06	58491	5924	-55255	-21	P	-t	0.7282	1.5601	0.4842	328.7	158.1	-	19S	146W
-2467	Feb 13	06:23:03	58478	5921	-55249	-16	T+	pp	0.0721	2.7035	1.7476	318.8	211.0	97.9	20N	153E
-2467	Aug 09	02:04:44	58464	5919	-55243	-11	T+	pp	0.0142	2.8752	1.7895	376.4	235.5	105.7	22S	147W
-2466	Feb 02	22:49:27	58451	5916	-55237	-6	P	a-	0.7783	1.4133	0.4463	279.0	137.9	-	23N	94W
-2466	Jul 29	04:09:09	58438	5914	-55231	-1	P	t-	-0.7116	1.5757	0.5294	320.3	160.8	-	24S	179W
-2466	Dec 24	22:08:39	58427	5912	-55226	-34	N	-a	-1.2757	0.5453	-0.5103	209.2	-	-	22N	88W
-2465	Jan 23	11:59:34	58425	5911	-55225	4	N	a-	1.5390	0.0427	-0.9741	59.0	-	-	25N	67E
-2465	Jun 19	04:46:17	58414	5909	-55220	-29	N	-a	1.1857	0.6613	-0.2969	207.9	-	-	20S	169E
-2465	Jul 18	13:24:16	58411	5909	-55219	9	N	a-	-1.3987	0.2852	-0.7022	145.7	-	-	25S	41E
-2465	Dec 14	00:19:23	58400	5907	-55214	-24	P	-t	-0.6198	1.7714	0.6710	347.3	182.4	-	21N	122W
-2464	Jun 07	21:41:14	58387	5904	-55208	-19	T	-a	0.4419	2.0175	1.0763	304.0	191.1	40.4	19S	85W
-2464	Dec 01	23:24:02	58374	5902	-55202	-14	T+	pp	0.0613	2.7939	1.6980	374.3	232.9	103.4	18N	109W
-2463	May 28	13:57:14	58361	5899	-55196	-9	T	p-	-0.3065	2.2794	1.3116	322.4	206.9	77.4	17S	31E
-2463	Nov 21	02:58:58	58348	5897	-55190	-4	P	a-	0.7405	1.5230	0.4760	310.3	150.5	-	16N	164W
-2462	May 18	01:07:53	58334	5894	-55184	1	N	t-	-1.1214	0.8107	-0.2098	245.7	-	-	14S	137W
-2462	Oct 12	02:33:19	58323	5892	-55179	-32	N	-a	-1.3338	0.3978	-0.5766	163.9	-	-	2S	155W
-2462	Nov 10	13:48:55	58321	5892	-55178	6	N	a-	1.3671	0.3461	-0.6471	156.8	-	-	12N	34E
-2461	Apr 07	14:21:06	58310	5890	-55173	-27	P	-t	0.8920	1.2571	0.1862	309.4	104.0	-	2N	30E
-2461	Oct 01	18:18:29	58297	5887	-55167	-22	P	-a	-0.6817	1.5954	0.6188	289.9	157.6	-	6S	31W
-2460	Mar 26	16:00:12	58284	5885	-55161	-17	T+	pp	0.1194	2.6622	1.6160	361.7	229.3	101.4	6N	6E

-2460 Sep 20	07:25:38	58270	5882	-55155	-12	T-	pp	-0.0001	2.8675	1.8482	341.7	220.2	101.1	9S	132E
-2459 Mar 16	00:00:45	58257	5880	-55149	-7	P	a-	-0.6417	1.6777	0.6832	308.3	170.8	-	10N	114W
-2459 Sep 09	14:01:58	58244	5877	-55143	-2	P	t-	0.7389	1.5388	0.4664	323.9	154.2	-	13S	33E
-2458 Feb 04	06:11:32	58233	5875	-55138	-35	N	-a	1.2290	0.5809	-0.3752	193.1	-	-	23N	155E
-2458 Mar 05	14:22:48	58231	5875	-55137	3	N	a-	-1.3316	0.3920	-0.5629	162.7	-	-	13N	31E
-2458 Jul 30	21:19:22	58220	5873	-55132	-30	N	-t	-1.4925	0.1581	-0.9185	121.6	-	-	24S	77W
-2458 Aug 29	14:27:12	58218	5872	-55131	8	N	t-	1.4571	0.2319	-0.8622	148.0	-	-	16S	26E
-2457 Jan 24	22:05:36	58206	5870	-55126	-25	P	-a	0.5563	1.8271	0.8471	305.6	179.8	-	24N	85W
-2457 Jul 20	01:15:40	58193	5868	-55120	-20	P	-t	-0.7119	1.5657	0.5381	313.4	159.5	-	25S	137W
-2456 Jan 14	09:27:09	58180	5865	-55114	-15	T-	pp	-0.1591	2.5844	1.5480	349.0	221.6	96.0	24N	103E
-2456 Jul 08	12:36:06	58167	5863	-55108	-10	T+	pp	0.0650	2.7243	1.7530	327.8	215.5	99.7	24S	51E
-2455 Jan 02	13:24:19	58154	5860	-55102	-5	P	t-	-0.8982	1.2549	0.1659	307.7	97.6	-	23N	43E
-2455 Jun 28	04:51:47	58140	5858	-55096	0	P	a-	0.7864	1.3868	0.4426	273.0	136.1	-	22S	167E
-2455 Nov 22	18:19:50	58130	5855	-55091	-33	N	-t	1.4386	0.2616	-0.8240	153.3	-	-	17N	35W
-2455 Dec 22	12:42:55	58127	5855	-55090	5	N	t-	-1.5786	0.0112	-1.0872	33.0	-	-	21N	52E
-2454 May 19	13:21:35	58116	5853	-55085	-28	N	-a	-1.0255	0.9669	-0.0142	251.5	-	-	15S	39E
-2454 Jun 17	21:31:09	58114	5853	-55084	10	Nb	a-	1.5270	0.0365	-0.9246	52.0	-	-	20S	83W
-2454 Nov 11	23:59:06	58103	5850	-55079	-23	P	-a	0.6978	1.5928	0.5627	308.2	158.8	-	12N	119W
-2453 May 08	22:33:36	58090	5848	-55073	-18	T	-t	-0.2783	2.3652	1.3299	353.7	221.0	83.4	10S	98W
-2453 Nov 01	12:28:28	58077	5845	-55067	-13	T-	pp	-0.0057	2.8386	1.8562	324.0	212.2	98.5	8N	53E
-2452 Apr 27	00:57:41	58063	5843	-55061	-8	P	t-	0.4995	1.9755	0.9079	355.1	204.2	-	6S	133W
-2452 Oct 21	04:02:25	58050	5840	-55055	-3	P	a-	-0.6653	1.6242	0.6500	289.8	159.8	-	3N	179W
-2451 Mar 17	12:57:56	58039	5838	-55050	-36	Ne	-t	-1.5254	0.0763	-0.9578	81.6	-	-	8N	51E
-2451 Apr 16	02:02:16	58037	5838	-55049	2	N	t-	1.2450	0.6000	-0.4523	224.0	-	-	1S	147W
-2451 Sep 11	04:52:43	58026	5836	-55044	-31	N	-a	1.4211	0.2674	-0.7663	147.0	-	-	11S	169E
-2451 Oct 10	18:01:12	58024	5835	-55043	7	N	a-	-1.3723	0.3451	-0.6650	160.2	-	-	2S	28W
-2450 Mar 06	22:54:59	58013	5833	-55038	-26	P	-a	-0.7158	1.5354	0.5535	294.8	154.7	-	13N	98W
-2450 Aug 31	09:30:01	58000	5831	-55032	-21	P	-t	0.7631	1.4990	0.4175	325.6	148.7	-	16S	100E
-2449 Feb 24	14:19:39	57987	5828	-55026	-16	T+	pp	0.0266	2.7851	1.8330	318.5	211.4	98.9	17N	32E
-2449 Aug 20	09:15:08	57973	5826	-55020	-11	T+	pp	0.0583	2.7956	1.7072	376.2	234.9	104.7	19S	104E

-2448 Feb 14	06:51:18	57960	5823	-55014	-6	P	a-	0.7412	1.4807	0.5150	283.8	146.9	-	20N	144E
-2448 Aug 08	11:31:27	57947	5821	-55008	-1	P	h-	-0.6626	1.6656	0.6191	324.8	170.9	-	22S	69E
-2447 Jan 04	06:10:08	57936	5819	-55003	-34	N	-h	-1.2956	0.5089	-0.5470	203.4	-	-	23N	151E
-2447 Feb 02	19:50:50	57934	5818	-55002	4	N	h-	1.5116	0.0929	-0.9239	87.0	-	-	23N	52W
-2447 Jun 29	12:15:48	57923	5816	-54997	-29	N	-a	1.2460	0.5506	-0.4074	191.3	-	-	22S	55E
-2447 Jul 28	21:04:25	57921	5816	-54996	9	N	a-	-1.3458	0.3823	-0.6051	166.6	-	-	25S	75W
-2447 Dec 24	08:08:50	57910	5814	-54991	-24	P	-t	-0.6331	1.7462	0.6472	346.1	180.0	-	22N	120E
-2446 Jun 19	05:10:07	57896	5811	-54985	-19	P	-a	0.5115	1.8909	0.9475	299.7	183.6	-	21S	161E
-2446 Dec 13	07:23:34	57883	5809	-54979	-14	T+	pp	0.0543	2.8049	1.7127	373.3	232.7	103.7	21N	130E
-2445 Jun 08	21:09:04	57870	5806	-54973	-9	T-	p-	-0.2326	2.4172	1.4451	326.6	211.7	88.3	20S	79W
-2445 Dec 02	11:25:33	57857	5804	-54967	-4	P	a-	0.7378	1.5258	0.4830	309.2	151.0	-	19N	68E
-2444 May 28	07:48:59	57844	5801	-54961	1	N	t-	-1.0433	0.9562	-0.0686	264.0	-	-	18S	121E
-2444 Oct 22	11:23:36	57833	5799	-54956	-32	N	-a	-1.3337	0.3982	-0.5765	163.8	-	-	3N	70E
-2444 Nov 20	22:37:25	57831	5799	-54955	6	N	a-	1.3656	0.3475	-0.6431	156.7	-	-	16N	101W
-2443 Apr 17	20:40:14	57820	5797	-54950	-27	P	-t	0.9768	1.1005	0.0315	294.2	43.7	-	2S	68W
-2443 Oct 12	03:01:42	57806	5794	-54944	-22	P	-a	-0.6882	1.5850	0.6051	290.0	156.4	-	1S	165W
-2442 Apr 06	22:41:46	57793	5792	-54938	-17	T+	pp	0.1960	2.5191	1.4779	358.2	226.0	94.9	2N	98W
-2442 Oct 01	15:46:30	57780	5789	-54932	-12	T-	pp	-0.0105	2.8511	1.8263	343.3	220.7	101.1	5S	4E
-2441 Mar 27	07:16:25	57767	5787	-54926	-7	P	a-	-0.5739	1.7992	0.8106	312.9	181.5	-	6N	134E
-2441 Sep 20	21:50:03	57754	5784	-54920	-2	P	t-	0.7203	1.5757	0.4977	327.6	158.9	-	9S	87W
-2440 Feb 15	14:16:33	57743	5782	-54915	-35	N	-a	1.2676	0.5085	-0.4445	181.8	-	-	20N	32E
-2440 Mar 15	22:03:18	57741	5782	-54914	3	N	a-	-1.2737	0.4962	-0.4547	180.8	-	-	9N	87W
-2440 Aug 10	04:25:05	57730	5780	-54909	-30	N	-t	-1.5387	0.0743	-1.0041	83.9	-	-	23S	175E
-2440 Sep 08	21:54:47	57728	5779	-54908	8	N	t-	1.4279	0.2871	-0.8103	164.0	-	-	12S	88W
-2439 Feb 04	06:11:32	57717	5777	-54903	-25	P	-a	0.5910	1.7633	0.7839	303.4	175.3	-	22N	152E
-2439 Jul 30	08:37:40	57703	5775	-54897	-20	P	-t	-0.7615	1.4745	0.4471	306.3	147.0	-	24S	111E
-2438 Jan 24	17:20:30	57690	5772	-54891	-15	T-	pp	-0.1320	2.6342	1.5976	350.7	223.2	98.4	23N	16W
-2438 Jul 19	20:13:32	57677	5770	-54885	-10	T+	pp	0.0086	2.8278	1.8564	327.2	215.4	100.3	24S	64W
-2437 Jan 13	21:02:20	57664	5767	-54879	-5	P	t-	-0.8757	1.2954	0.2079	311.6	108.8	-	23N	73W
-2437 Jul 09	12:31:12	57651	5765	-54873	0	P	a-	0.7259	1.4990	0.5526	280.2	149.5	-	23S	51E

-2437 Dec 04	02:27:57	57640	5763	-54868	-33	N	-t	1.4383	0.2602	-0.8216	152.4	-	-	20N	158W
-2436 Jan 02	20:25:48	57638	5763	-54867	5	N	t-	-1.5598	0.0436	-1.0506	64.9	-	-	22N	65W
-2436 May 29	20:24:43	57627	5760	-54862	-28	N	-a	-1.1047	0.8236	-0.1617	236.6	-	-	18S	69W
-2436 Jun 28	04:55:31	57624	5760	-54861	10	N	a-	1.4673	0.1485	-0.8172	104.2	-	-	22S	164E
-2436 Nov 22	08:33:39	57614	5758	-54856	-23	P	-a	0.6941	1.5977	0.5712	307.3	159.4	-	16N	110E
-2435 May 19	05:07:03	57600	5755	-54850	-18	T	-t	-0.3631	2.2112	1.1725	351.1	214.9	63.9	14S	161E
-2435 Nov 11	21:19:33	57587	5753	-54844	-13	T-	pp	-0.0075	2.8345	1.8536	323.3	211.9	98.4	12N	82W
-2434 May 08	07:12:23	57574	5751	-54838	-8	T	t-	0.4111	2.1378	1.0702	361.7	215.2	43.1	10S	131E
-2434 Nov 01	12:54:57	57561	5748	-54832	-3	P	a-	-0.6674	1.6213	0.6454	290.0	159.5	-	7N	45E
-2433 Apr 27	08:29:01	57548	5746	-54826	2	N	t-	1.1591	0.7557	-0.2929	246.7	-	-	5S	113E
-2433 Sep 22	13:00:32	57537	5744	-54821	-31	N	-a	1.4399	0.2361	-0.8038	139.1	-	-	7S	45E
-2433 Oct 22	02:37:52	57535	5743	-54820	7	N	a-	-1.3757	0.3410	-0.6734	159.9	-	-	2N	160W
-2432 Mar 17	06:22:28	57524	5741	-54815	-26	P	-a	-0.7732	1.4274	0.4512	286.6	141.5	-	9N	148E
-2432 Sep 10	17:05:46	57511	5739	-54809	-21	P	-t	0.7900	1.4522	0.3654	323.3	140.5	-	12S	16W
-2431 Mar 06	22:08:14	57498	5736	-54803	-16	T-	pp	-0.0259	2.7845	1.8359	318.0	211.4	99.1	13N	88W
-2431 Aug 30	16:36:46	57484	5734	-54797	-11	T+	pp	0.0936	2.7321	1.6411	375.7	233.9	103.0	16S	9W
-2430 Feb 24	14:45:29	57471	5731	-54791	-6	P	a-	0.6984	1.5587	0.5940	289.0	156.1	-	17N	23E
-2430 Aug 19	19:03:09	57458	5729	-54785	-1	P	h-	-0.6204	1.7432	0.6965	328.1	178.3	-	20S	45W
-2429 Jan 15	14:04:12	57447	5727	-54780	-34	N	-h	-1.3207	0.4630	-0.5929	195.4	-	-	23N	31E
-2429 Feb 14	03:33:34	57445	5726	-54779	4	N	h-	1.4783	0.1540	-0.8628	111.7	-	-	21N	169W
-2429 Jul 10	19:50:52	57434	5724	-54774	-29	N	-a	1.3021	0.4479	-0.5105	173.9	-	-	23S	60W
-2429 Aug 09	04:52:41	57432	5724	-54773	9	N	a-	-1.2989	0.4685	-0.5190	182.4	-	-	23S	167E
-2428 Jan 04	15:50:50	57421	5722	-54768	-24	P	-t	-0.6524	1.7099	0.6129	344.1	176.4	-	23N	3E
-2428 Jun 29	12:43:18	57408	5719	-54762	-19	P	-a	0.5773	1.7715	0.8254	295.0	175.2	-	23S	46E
-2428 Dec 23	15:17:50	57395	5717	-54756	-14	T+	pp	0.0425	2.8244	1.7365	372.1	232.5	104.0	23N	10E
-2427 Jun 19	04:24:15	57382	5714	-54750	-9	T-	pp	-0.1620	2.5490	1.5722	330.0	215.2	95.3	22S	170E
-2427 Dec 12	19:47:59	57369	5712	-54744	-4	P	a-	0.7310	1.5358	0.4979	308.5	152.5	-	22N	59W
-2426 Jun 08	14:32:32	57355	5709	-54738	1	P	t-	-0.9678	1.0970	0.0675	279.9	61.3	-	20S	18E
-2426 Nov 02	20:15:52	57344	5707	-54733	-32	N	-a	-1.3324	0.4004	-0.5741	164.0	-	-	7N	66W
-2426 Dec 02	07:23:35	57342	5707	-54732	6	N	a-	1.3621	0.3524	-0.6351	157.3	-	-	20N	126E



-2425 Apr 29	02:55:57	57331	5705	-54727	-27	N	-t	1.0641	0.9397	-0.1279	276.3	-	-	6S	165W
-2425 Oct 23	11:48:44	57318	5702	-54721	-22	P	-a	-0.6914	1.5807	0.5979	290.4	155.8	-	3N	61E
-2424 Apr 17	05:19:29	57305	5700	-54715	-17	T	pp	0.2764	2.3691	1.3327	353.8	221.0	83.6	2S	160E
-2424 Oct 12	00:12:12	57292	5697	-54709	-12	T-	pp	-0.0162	2.8433	1.8134	344.9	221.2	101.1	0S	125W
-2423 Apr 06	14:27:28	57279	5695	-54703	-7	P	a-	-0.5013	1.9298	0.9465	317.1	190.9	-	1N	24E
-2423 Oct 01	05:45:45	57266	5692	-54697	-2	P	t-	0.7087	1.5994	0.5164	330.3	161.7	-	4S	152E
-2422 Feb 25	22:12:53	57255	5690	-54692	-35	N	-a	1.3134	0.4230	-0.5272	167.1	-	-	17N	89W
-2422 Mar 27	05:37:41	57253	5690	-54691	3	N	a-	-1.2104	0.6105	-0.3369	197.9	-	-	5N	157E
-2422 Aug 21	11:41:15	57242	5688	-54686	-30	Ne	-t	-1.5770	0.0050	-1.0752	21.8	-	-	20S	65E
-2422 Sep 20	05:31:28	57240	5687	-54685	8	N	t-	1.4057	0.3294	-0.7709	175.1	-	-	8S	156E
-2421 Feb 15	14:07:59	57229	5685	-54680	-25	P	-a	0.6329	1.6860	0.7072	300.4	169.1	-	20N	32E
-2421 Aug 10	16:09:39	57216	5683	-54674	-20	P	-h	-0.8041	1.3964	0.3691	299.8	134.7	-	22S	3W
-2420 Feb 05	01:02:13	57202	5680	-54668	-15	T-	pp	-0.0962	2.6998	1.6634	352.5	224.8	100.8	21N	133W
-2420 Jul 30	03:59:53	57189	5678	-54662	-10	T-	pp	-0.0410	2.7686	1.7967	326.2	214.6	99.7	23S	178E
-2419 Jan 24	04:30:39	57176	5676	-54656	-5	P	t-	-0.8455	1.3497	0.2641	316.5	121.7	-	22N	174E
-2419 Jul 19	20:17:13	57163	5673	-54650	0	P	a-	0.6711	1.6010	0.6519	286.2	159.9	-	23S	67W
-2419 Dec 14	10:33:25	57152	5671	-54645	-33	N	-t	1.4407	0.2536	-0.8238	150.1	-	-	23N	79E
-2418 Jan 13	04:02:22	57150	5671	-54644	5	N	t-	-1.5354	0.0859	-1.0037	90.6	-	-	23N	180W
-2418 Jun 10	03:29:15	57139	5669	-54639	-28	N	-a	-1.1817	0.6848	-0.3053	219.8	-	-	21S	177W
-2418 Jul 09	12:24:32	57137	5668	-54638	10	N	a-	1.4118	0.2529	-0.7179	135.2	-	-	22S	50E
-2418 Dec 03	17:07:54	57126	5666	-54633	-23	P	-a	0.6913	1.6008	0.5785	306.2	159.7	-	19N	20W
-2417 May 30	11:38:49	57113	5664	-54627	-18	T	-t	-0.4483	2.0569	1.0144	347.3	206.7	19.4	17S	60E
-2417 Nov 23	06:11:17	57100	5661	-54621	-13	T-	pp	-0.0096	2.8298	1.8507	322.7	211.7	98.4	16N	144E
-2416 May 18	13:26:39	57087	5659	-54615	-8	T	tp	0.3221	2.3013	1.2332	366.9	223.6	74.4	13S	34E
-2416 Nov 11	21:47:37	57074	5656	-54609	-3	P	a-	-0.6699	1.6173	0.6402	290.2	159.2	-	11N	91W
-2415 May 07	14:57:26	57061	5654	-54603	2	N	t-	1.0734	0.9113	-0.1340	265.7	-	-	9S	12E
-2415 Oct 02	21:14:00	57050	5652	-54598	-31	N	-a	1.4535	0.2140	-0.8314	133.3	-	-	3S	81W
-2415 Nov 01	11:15:50	57048	5651	-54597	7	N	a-	-1.3807	0.3337	-0.6844	158.8	-	-	7N	68E
-2414 Mar 28	13:46:11	57037	5649	-54592	-26	P	-a	-0.8341	1.3128	0.3419	277.4	124.8	-	5N	34E
-2414 Sep 22	00:48:09	57024	5647	-54586	-21	P	-t	0.8109	1.4164	0.3247	321.6	133.5	-	8S	134W

-2413 Mar 18	05:50:20	57011	5644	-54580	-16	T-	pp	-0.0839	2.6766	1.7310	317.1	210.8	97.8	9N	154E
-2413 Sep 11	00:08:08	56997	5642	-54574	-11	T+	pp	0.1210	2.6830	1.5898	375.2	232.9	101.1	13S	124W
-2412 Mar 06	22:28:35	56984	5639	-54568	-6	P	a-	0.6472	1.6524	0.6883	294.8	165.9	-	14N	95W
-2412 Aug 30	02:46:59	56971	5637	-54562	-1	P	a-	-0.5875	1.8037	0.7568	330.2	183.4	-	17S	163W
-2411 Jan 25	21:46:03	56960	5635	-54557	-34	N	-h	-1.3542	0.4013	-0.6543	183.5	-	-	22N	85W
-2411 Feb 24	11:04:09	56958	5635	-54556	4	N	h-	1.4366	0.2307	-0.7864	136.3	-	-	18N	77E
-2411 Jul 21	03:34:45	56947	5633	-54551	-29	N	-a	1.3515	0.3576	-0.6016	156.5	-	-	22S	177W
-2411 Aug 19	12:51:39	56945	5632	-54550	9	N	a-	-1.2600	0.5400	-0.4479	194.0	-	-	21S	45E
-2410 Jan 14	23:22:57	56934	5630	-54545	-24	P	-t	-0.6792	1.6595	0.5650	341.1	170.8	-	23N	111W
-2410 Jul 10	20:22:23	56921	5628	-54539	-19	P	-a	0.6378	1.6622	0.7128	290.2	166.0	-	23S	70W
-2409 Jan 03	23:06:00	56908	5625	-54533	-14	T+	pp	0.0251	2.8537	1.7709	370.9	232.3	104.3	24N	108W
-2409 Jun 30	11:41:12	56895	5623	-54527	-9	T-	pp	-0.0940	2.6766	1.6944	332.8	217.5	99.4	23S	59E
-2409 Dec 24	04:07:24	56882	5620	-54521	-4	P	a-	0.7210	1.5514	0.5190	308.1	154.8	-	24N	175E
-2408 Jun 18	21:16:49	56869	5618	-54515	1	P	t-	-0.8938	1.2355	0.2007	293.9	104.0	-	23S	85W
-2408 Nov 13	05:09:56	56858	5616	-54510	-32	N	-a	-1.3301	0.4043	-0.5694	164.6	-	-	11N	158E
-2408 Dec 12	16:07:00	56856	5615	-54509	6	N	a-	1.3563	0.3613	-0.6226	158.7	-	-	22N	6W
-2407 May 09	09:10:23	56845	5613	-54504	-27	N	-t	1.1519	0.7780	-0.2884	255.3	-	-	10S	98E
-2407 Nov 02	20:38:49	56832	5611	-54498	-22	P	-a	-0.6915	1.5818	0.5966	291.2	156.0	-	8N	74W
-2406 Apr 28	11:56:37	56819	5608	-54492	-17	T	-t	0.3583	2.2168	1.1847	348.3	214.2	65.5	6S	57E
-2406 Oct 23	08:41:15	56806	5606	-54486	-12	T-	pp	-0.0182	2.8419	1.8074	346.4	221.7	101.2	4N	105E
-2405 Apr 17	21:36:38	56793	5604	-54480	-7	T	a-	-0.4261	2.0653	1.0868	320.6	198.7	44.3	3S	87W
-2405 Oct 12	13:46:10	56780	5601	-54474	-2	P	t-	0.7012	1.6155	0.5280	332.5	163.5	-	0N	29E
-2404 Mar 08	06:01:17	56769	5599	-54469	-35	N	-a	1.3659	0.3255	-0.6223	148.0	-	-	14N	151E
-2404 Apr 06	13:07:03	56767	5599	-54468	3	N	a-	-1.1426	0.7335	-0.2109	213.9	-	-	1N	41E
-2404 Sep 30	13:16:03	56754	5596	-54462	8	N	t-	1.3892	0.3608	-0.7417	182.7	-	-	4S	37E
-2403 Feb 25	21:55:28	56743	5594	-54457	-25	P	-a	0.6819	1.5960	0.6174	296.3	160.8	-	17N	87W
-2403 Aug 20	23:52:16	56730	5592	-54451	-20	P	-h	-0.8389	1.3325	0.3053	294.0	123.3	-	20S	120W
-2402 Feb 15	08:33:53	56717	5589	-54445	-15	T-	pp	-0.0529	2.7792	1.7428	354.1	226.3	102.7	19N	113E
-2402 Aug 10	11:55:43	56704	5587	-54439	-10	T-	pp	-0.0834	2.6912	1.7186	325.2	213.5	98.2	21S	58E
-2401 Feb 04	11:47:55	56691	5584	-54433	-5	P	t-	-0.8068	1.4198	0.3363	322.3	136.1	-	21N	64E

-2401 Jul 31	04:10:42	56678	5582	-54427	0	P	a-	0.6225	1.6917	0.7394	291.2	167.8	-	22S	173E
-2401 Dec 25	18:33:31	56667	5580	-54422	-33	N	-t	1.4481	0.2374	-0.8348	144.9	-	-	24N	42W
-2400 Jan 24	11:29:22	56665	5579	-54421	5	N	t-	-1.5027	0.1435	-0.9410	116.2	-	-	22N	67E
-2400 Jun 20	10:36:19	56654	5577	-54416	-28	N	-a	-1.2554	0.5522	-0.4432	200.9	-	-	23S	74E
-2400 Jul 19	20:00:17	56652	5577	-54415	10	N	a-	1.3621	0.3467	-0.6296	157.5	-	-	23S	65W
-2400 Dec 14	01:37:27	56641	5575	-54410	-23	P	-a	0.6934	1.5946	0.5771	304.6	159.1	-	22N	149W

## 24TH CENTURY BCE

**In the 24th century BCE the total number of lunar eclipses was 251 lunar eclipses: 91 penumbral lunar eclipses, 100 partial lunar eclipses, 60 total lunar eclipses (51 central total lunar eclipses, 9 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-2399 Jun 09	18:12:39	56628	5573	-54404	-18	P	-t	-0.5307	1.9079	0.8609	342.6	196.4	-	20S	40W
-2399 Dec 03	15:01:12	56615	5570	-54398	-13	T-	pp	-0.0095	2.8288	1.8521	322.0	211.5	98.4	19N	9E
-2398 May 29	19:41:24	56602	5568	-54392	-8	T+	pp	0.2334	2.4645	1.3956	370.7	229.7	91.2	17S	62W
-2398 Nov 23	06:40:27	56589	5565	-54386	-3	P	a-	-0.6728	1.6122	0.6344	290.3	158.8	-	15N	134E
-2397 May 18	21:25:37	56576	5563	-54380	2	P	t-	0.9859	1.0705	0.0280	282.2	40.3	-	13S	88W
-2397 Oct 14	05:32:58	56565	5561	-54375	-31	N	-a	1.4615	0.2018	-0.8488	130.1	-	-	2N	151E
-2397 Nov 12	19:55:11	56563	5560	-54374	7	N	a-	-1.3878	0.3223	-0.6990	156.8	-	-	11N	64W
-2396 Apr 07	21:04:02	56552	5558	-54369	-26	P	-a	-0.9006	1.1885	0.2223	266.6	102.1	-	0N	79W
-2396 Oct 02	08:38:33	56539	5556	-54363	-21	P	-t	0.8245	1.3935	0.2976	320.6	128.5	-	3S	106E
-2395 Mar 28	13:26:32	56526	5553	-54357	-16	T-	-p	-0.1469	2.5598	1.6166	315.9	209.3	94.7	5N	37E
-2395 Sep 21	07:48:18	56513	5551	-54351	-11	T+	pp	0.1414	2.6464	1.5514	374.5	231.9	99.4	9S	119E
-2394 Mar 18	06:05:26	56500	5549	-54345	-6	P	a-	0.5914	1.7547	0.7908	300.6	175.3	-	10N	148E

-2394 Sep 10	10:40:26	56487	5546	-54339	-1	P	a-	-0.5615	1.8513	0.8044	331.5	187.0	-	13S	76E
-2393 Feb 06	05:18:35	56476	5544	-54334	-34	N	-t	-1.3944	0.3273	-0.7278	167.4	-	-	20N	160E
-2393 Mar 07	18:25:28	56474	5544	-54333	4	N	t-	1.3882	0.3198	-0.6977	159.7	-	-	14N	36W
-2393 Aug 01	11:25:47	56463	5542	-54328	-29	N	-a	1.3957	0.2772	-0.6833	138.6	-	-	21S	64E
-2393 Aug 30	20:59:23	56461	5541	-54327	9	N	a-	-1.2277	0.5995	-0.3888	202.6	-	-	18S	78W
-2392 Jan 26	06:46:26	56450	5539	-54322	-24	P	-t	-0.7127	1.5965	0.5050	337.0	163.1	-	22N	138E
-2392 Jul 21	04:08:10	56437	5537	-54316	-19	P	-a	0.6924	1.5639	0.6107	285.5	156.3	-	23S	172E
-2391 Jan 14	06:46:17	56424	5534	-54310	-14	T+	pp	0.0006	2.8958	1.8185	369.5	232.1	104.5	24N	136E
-2391 Jul 10	19:04:36	56411	5532	-54304	-9	T-	pp	-0.0322	2.7928	1.8048	335.0	218.9	101.3	24S	53W
-2390 Jan 03	12:20:55	56398	5529	-54298	-4	P	a-	0.7055	1.5769	0.5504	308.3	158.1	-	25N	51E
-2390 Jun 30	04:05:01	56385	5527	-54292	1	P	t-	-0.8237	1.3671	0.3267	306.0	130.7	-	24S	171E
-2390 Nov 24	14:02:48	56374	5525	-54287	-32	N	-a	-1.3290	0.4056	-0.5670	164.8	-	-	15N	23E
-2390 Dec 24	00:45:29	56372	5525	-54286	6	N	a-	1.3463	0.3776	-0.6024	161.5	-	-	24N	136W
-2389 May 20	15:25:29	56361	5523	-54281	-27	N	-t	1.2386	0.6184	-0.4473	231.0	-	-	13S	2E
-2389 Nov 14	05:28:44	56348	5520	-54275	-22	P	-a	-0.6917	1.5824	0.5952	291.9	156.1	-	12N	151E
-2388 May 08	18:33:14	56335	5518	-54269	-17	T	-t	0.4415	2.0621	1.0338	341.7	205.4	29.3	10S	45W
-2388 Nov 02	17:12:16	56322	5515	-54263	-12	T-	pp	-0.0180	2.8442	1.8059	347.9	222.3	101.3	9N	25W
-2387 Apr 28	04:44:21	56309	5513	-54257	-7	T	a-	-0.3484	2.2057	1.2313	323.4	205.1	68.9	7S	163E
-2387 Oct 22	21:50:17	56296	5510	-54251	-2	P	t-	0.6972	1.6247	0.5336	334.1	164.6	-	5N	94W
-2386 Mar 19	13:42:35	56285	5508	-54246	-35	N	-a	1.4242	0.2175	-0.7283	122.2	-	-	10N	33E
-2386 Apr 17	20:32:59	56283	5508	-54245	3	N	a-	-1.0715	0.8628	-0.0793	228.6	-	-	3S	74W
-2386 Oct 11	21:08:28	56270	5506	-54239	8	N	t-	1.3785	0.3812	-0.7229	187.4	-	-	1N	84W
-2385 Mar 09	05:32:27	56259	5504	-54234	-25	P	-a	0.7388	1.4915	0.5129	291.0	149.4	-	13N	156E
-2385 Sep 01	07:45:42	56246	5501	-54228	-20	P	-a	-0.8658	1.2831	0.2559	289.2	113.3	-	17S	119E
-2384 Feb 26	15:54:04	56233	5499	-54222	-15	T-	pp	-0.0011	2.8744	1.8379	355.5	227.4	103.8	16N	1E
-2384 Aug 20	20:01:20	56220	5496	-54216	-10	T-	pp	-0.1182	2.6278	1.6543	324.0	212.3	96.4	19S	65W
-2383 Feb 14	18:54:51	56207	5494	-54210	-5	P	t-	-0.7597	1.5049	0.4237	328.8	150.9	-	18N	45W
-2383 Aug 10	12:12:35	56194	5491	-54204	0	P	a-	0.5810	1.7696	0.8139	295.2	173.9	-	21S	51E
-2382 Jan 05	02:28:59	56183	5489	-54199	-33	N	-t	1.4599	0.2130	-0.8536	137.0	-	-	25N	161W
-2382 Feb 03	18:49:26	56181	5489	-54198	5	N	t-	-1.4636	0.2124	-0.8667	140.1	-	-	20N	44W
-2382 Jul 01	17:45:36	56170	5487	-54193	-28	N	-a	-1.3262	0.4252	-0.5760	179.3	-	-	25S	35W
-2382 Jul 31	03:40:54	56168	5487	-54192	10	N	a-	1.3170	0.4325	-0.5497	175.2	-	-	22S	178E
-2382 Dec 25	10:04:18	56157	5484	-54187	-23	P	-a	0.6985	1.5826	0.5703	302.6	157.9	-	24N	84E
-2381 Jun 21	00:48:06	56144	5482	-54181	-18	P	-t	-0.6111	1.7627	0.7111	336.8	183.7	-	23S	141W
-2381 Dec 14	23:47:23	56131	5480	-54175	-13	T-	pp	-0.0061	2.8335	1.8596	321.4	211.4	98.4	21N	123W
-2380 Jun 09	01:59:17	56118	5477	-54169	-8	T+	pp	0.1470	2.6235	1.5535	373.3	233.7	100.8	20S	159W
-2380 Dec 03	15:30:02	56105	5475	-54163	-3	P	a-	-0.6734	1.6115	0.6333	290.7	158.9	-	18N	0E
-2379 May 29	03:58:38	56093	5472	-54157	2	P	t-	0.9011	1.2248	0.1846	295.8	100.8	-	16S	171E
-2379 Oct 24	13:53:33	56082	5470	-54152	-31	N	-a	1.4676	0.1929	-0.8621	127.8	-	-	6N	24E
-2379 Nov 23	04:31:29	56080	5470	-54151	7	N	a-	-1.3932	0.3137	-0.7101	155.4	-	-	15N	164E

-2378 Apr 19	04:20:58	56069	5468	-54146	-26	P	-a	-0.9685	1.0619	0.0997	254.6	69.4	-	4S	169E
-2378 Oct 13	16:33:47	56056	5466	-54140	-21	P	-t	0.8338	1.3783	0.2788	320.2	124.9	-	1N	16W
-2377 Apr 08	20:56:39	56043	5463	-54134	-16	T-	-p	-0.2151	2.4336	1.4923	314.0	206.9	89.1	1N	79W
-2377 Oct 02	15:37:14	56030	5461	-54128	-11	T+	pp	0.1551	2.6219	1.5258	373.8	231.1	98.1	4S	1W
-2376 Mar 28	13:33:14	56017	5458	-54122	-6	P	a-	0.5285	1.8702	0.9060	306.6	184.4	-	6N	33E
-2376 Sep 20	18:44:22	56004	5456	-54116	-1	P	a-	-0.5433	1.8846	0.8381	332.0	189.1	-	9S	47W
-2375 Feb 16	12:38:21	55993	5454	-54111	-34	N	-t	-1.4438	0.2364	-0.8181	143.8	-	-	17N	49E
-2375 Mar 18	01:36:03	55991	5453	-54110	4	N	t-	1.3319	0.4235	-0.5949	182.7	-	-	10N	146W
-2375 Aug 11	19:27:14	55980	5451	-54105	-29	N	-a	1.4320	0.2113	-0.7507	121.6	-	-	20S	58W
-2375 Sep 10	05:17:53	55978	5451	-54104	9	N	a-	-1.2034	0.6443	-0.3444	208.6	-	-	14S	155E
-2374 Feb 05	13:59:43	55967	5449	-54099	-24	P	-t	-0.7542	1.5187	0.4305	331.6	152.5	-	20N	28E
-2374 Aug 01	12:00:24	55954	5447	-54093	-19	P	-a	0.7413	1.4762	0.5189	280.9	146.3	-	22S	53E
-2373 Jan 25	14:19:34	55941	5444	-54087	-14	T-	pp	-0.0302	2.8386	1.7672	367.8	231.6	104.3	23N	22E
-2373 Jul 22	02:32:38	55928	5442	-54081	-9	T+	pp	0.0246	2.8099	1.8157	336.8	219.5	101.4	24S	166W
-2372 Jan 14	20:27:48	55915	5439	-54075	-4	P	a-	0.6837	1.6137	0.5935	309.0	162.6	-	25N	71W
-2372 Jul 10	10:57:38	55902	5437	-54069	1	P	t-	-0.7578	1.4909	0.4445	316.5	150.2	-	25S	67E
-2372 Dec 04	22:54:24	55892	5435	-54064	-32	N	-a	-1.3294	0.4042	-0.5668	164.4	-	-	18N	111W
-2371 Jan 03	09:18:59	55890	5434	-54063	6	N	a-	1.3323	0.4012	-0.5746	165.7	-	-	25N	95E
-2371 May 30	21:42:58	55879	5432	-54058	-27	N	-t	1.3236	0.4624	-0.6029	202.5	-	-	16S	95W
-2371 Jun 29	12:49:51	55877	5432	-54057	11	Nb	t-	-1.5294	0.0891	-0.9848	92.4	-	-	25S	38E
-2371 Nov 24	14:17:48	55866	5430	-54052	-22	P	-a	-0.6923	1.5820	0.5933	292.5	156.2	-	16N	17E
-2370 May 20	01:12:54	55853	5428	-54046	-17	P	-t	0.5232	1.9106	0.8857	334.2	194.7	-	14S	148W
-2370 Nov 14	01:43:44	55840	5425	-54040	-12	T-	pp	-0.0167	2.8482	1.8067	349.3	222.9	101.5	13N	155W
-2369 May 09	11:51:43	55827	5423	-54034	-7	T-	p-	-0.2695	2.3487	1.3780	325.5	209.9	83.5	11S	53E
-2369 Nov 03	05:57:01	55814	5420	-54028	-2	P	t-	0.6957	1.6288	0.5349	335.2	165.1	-	9N	141E
-2368 Mar 29	21:17:59	55803	5418	-54023	-35	Ne	-a	1.4871	0.1013	-0.8431	84.3	-	-	6N	83W
-2368 Apr 28	03:56:52	55801	5418	-54022	3	P	a-	-0.9984	0.9961	0.0556	241.9	51.1	-	8S	172E
-2368 Oct 22	05:05:04	55788	5416	-54016	8	N	t-	1.3709	0.3956	-0.7092	190.6	-	-	5N	155E
-2367 Mar 19	13:01:47	55777	5414	-54011	-25	P	-a	0.8014	1.3770	0.3979	284.3	134.4	-	9N	41E
-2367 Sep 11	15:49:37	55765	5411	-54005	-20	P	-a	-0.8850	1.2478	0.2208	285.4	105.4	-	13S	4W
-2366 Mar 08	23:04:53	55752	5409	-53999	-15	T+	pp	0.0577	2.7707	1.7339	356.4	227.7	103.3	12N	109W
-2366 Sep 01	04:15:30	55739	5406	-53993	-10	T-	-p	-0.1464	2.5765	1.6019	323.0	211.1	94.4	16S	169E
-2365 Feb 26	01:51:21	55726	5404	-53987	-5	P	t-	-0.7044	1.6053	0.5266	335.7	165.7	-	15N	151W
-2365 Aug 21	20:22:44	55713	5402	-53981	0	P	a-	0.5464	1.8350	0.8756	298.5	178.6	-	18S	73W
-2364 Jan 16	10:15:24	55702	5400	-53976	-33	N	-t	1.4795	0.1738	-0.8867	123.6	-	-	25N	81E
-2364 Feb 15	01:58:24	55700	5399	-53975	5	N	t-	-1.4147	0.2994	-0.7742	164.5	-	-	18N	153W
-2364 Jul 12	01:00:41	55689	5397	-53970	-28	N	-a	-1.3912	0.3091	-0.6983	155.3	-	-	25S	145W
-2364 Aug 10	11:30:15	55687	5397	-53969	10	N	a-	1.2794	0.5045	-0.4838	188.8	-	-	20S	60E
-2363 Jan 04	18:24:09	55676	5395	-53964	-23	P	-a	0.7104	1.5578	0.5512	299.8	155.3	-	25N	42W
-2363 Jul 01	07:28:12	55663	5392	-53958	-18	P	-t	-0.6866	1.6268	0.5700	330.3	168.7	-	24S	118E

-2363	Dec 25	08:28:21	55650	5390	-53952	-13	T+	pp	0.0020	2.8395	1.8688	320.8	211.2	98.4	23N	105E
-2362	Jun 20	08:21:49	55637	5387	-53946	-8	T+	pp	0.0641	2.7765	1.7049	374.7	235.6	105.5	22S	104E
-2362	Dec 15	00:16:22	55624	5385	-53940	-3	P	a-	-0.6717	1.6144	0.6364	291.3	159.5	-	21N	133W
-2361	Jun 09	10:34:13	55612	5383	-53934	2	P	t-	0.8171	1.3780	0.3397	307.3	133.3	-	19S	70E
-2361	Nov 04	22:17:29	55601	5381	-53929	-31	N	-a	1.4702	0.1901	-0.8686	127.4	-	-	11N	105W
-2361	Dec 04	13:06:11	55599	5380	-53928	7	N	a-	-1.3981	0.3056	-0.7201	154.0	-	-	18N	34E
-2360	Apr 29	11:35:10	55588	5378	-53923	-26	N	-a	-1.0394	0.9300	-0.0287	240.8	-	-	8S	57E
-2360	May 28	19:38:36	55586	5378	-53922	12	Nb	a-	1.5215	0.0576	-0.9250	67.1	-	-	15S	65W
-2360	Oct 24	00:33:37	55575	5376	-53917	-21	P	-t	0.8388	1.3704	0.2682	320.2	122.8	-	6N	138W
-2359	Apr 19	04:23:39	55562	5373	-53911	-16	T	-p	-0.2861	2.3028	1.3628	311.5	203.3	80.2	3S	166E
-2359	Oct 12	23:33:51	55549	5371	-53905	-11	T+	pp	0.1631	2.6075	1.5109	373.2	230.4	97.2	0N	123W
-2358	Apr 08	20:55:50	55536	5369	-53899	-6	T	a-	0.4620	1.9927	1.0276	312.3	192.7	25.1	1N	81W
-2358	Oct 02	02:56:07	55523	5366	-53893	-1	P	a-	-0.5306	1.9075	0.8616	331.9	190.4	-	5S	172W
-2357	Feb 27	19:49:16	55513	5364	-53888	-34	N	-t	-1.4991	0.1348	-0.9193	109.9	-	-	14N	61W
-2357	Mar 29	08:39:08	55510	5364	-53887	4	N	t-	1.2703	0.5370	-0.4825	204.3	-	-	6N	105E
-2357	Aug 23	03:36:46	55500	5362	-53882	-29	N	-a	1.4622	0.1568	-0.8069	105.1	-	-	17S	178E
-2357	Sep 21	13:44:11	55498	5361	-53881	9	N	a-	-1.1853	0.6775	-0.3114	212.7	-	-	10S	26E
-2356	Feb 16	21:02:49	55487	5359	-53876	-24	P	-t	-0.8034	1.4266	0.3418	324.6	137.8	-	18N	80W
-2356	Aug 11	20:01:07	55474	5357	-53870	-19	P	-a	0.7828	1.4025	0.4407	276.9	136.6	-	20S	69W
-2355	Feb 04	21:44:37	55461	5355	-53864	-14	T-	pp	-0.0681	2.7659	1.7006	365.9	230.8	103.4	21N	90W
-2355	Aug 01	10:07:43	55448	5352	-53858	-9	T+	pp	0.0746	2.7214	1.7209	338.2	219.4	100.3	23S	79E
-2354	Jan 25	04:27:29	55435	5350	-53852	-4	P	a-	0.6552	1.6627	0.6489	310.3	168.0	-	24N	168E
-2354	Jul 21	17:57:10	55422	5347	-53846	1	P	t-	-0.6985	1.6029	0.5504	325.3	164.8	-	24S	39W
-2354	Dec 16	07:41:21	55412	5345	-53841	-32	N	-a	-1.3338	0.3951	-0.5740	162.5	-	-	20N	116E
-2353	Jan 14	17:44:41	55409	5345	-53840	6	N	a-	1.3117	0.4367	-0.5346	171.8	-	-	25N	33W
-2353	Jun 11	04:03:53	55399	5343	-53835	-27	N	-t	1.4055	0.3121	-0.7533	168.5	-	-	19S	167E
-2353	Jul 10	19:24:11	55397	5343	-53834	11	N	t-	-1.4589	0.2201	-0.8571	143.7	-	-	25S	62W
-2353	Dec 05	23:03:32	55386	5341	-53829	-22	P	-a	-0.6953	1.5769	0.5874	292.9	155.9	-	19N	116W
-2352	May 30	07:55:55	55373	5338	-53823	-17	P	-t	0.6029	1.7630	0.7408	325.8	182.0	-	17S	109E
-2352	Nov 24	10:12:38	55360	5336	-53817	-12	T-	pp	-0.0167	2.8496	1.8055	350.6	223.5	101.7	16N	76E
-2351	May 19	19:01:01	55347	5333	-53811	-7	T-	p-	-0.1913	2.4908	1.5228	326.7	213.2	92.7	14S	57W
-2351	Nov 13	14:04:52	55334	5331	-53805	-2	P	t-	0.6959	1.6294	0.5335	336.0	165.2	-	13N	17E
-2350	May 09	11:18:24	55321	5329	-53799	3	P	a-	-0.9231	1.1337	0.1942	254.0	93.6	-	11S	59E
-2350	Nov 02	13:06:43	55309	5326	-53793	8	N	t-	1.3668	0.4030	-0.7017	192.1	-	-	10N	32E
-2349	Mar 30	20:22:17	55298	5324	-53788	-25	P	-a	0.8704	1.2509	0.2709	275.8	113.3	-	5N	72W
-2349	Sep 23	00:03:13	55285	5322	-53782	-20	P	-a	-0.8975	1.2246	0.1981	282.5	99.9	-	9S	130W
-2348	Mar 19	06:04:29	55272	5320	-53776	-15	T+	pp	0.1250	2.6475	1.6102	356.7	227.0	100.5	9N	143E
-2348	Sep 11	12:39:17	55259	5317	-53770	-10	T-	-p	-0.1674	2.5385	1.5629	322.0	209.9	92.6	12S	41E
-2347	Mar 08	08:39:05	55246	5315	-53764	-5	P	t-	-0.6416	1.7193	0.6428	342.8	179.8	-	12N	105E
-2347	Sep 01	04:40:11	55233	5312	-53758	0	P	a-	0.5179	1.8892	0.9261	301.2	182.1	-	15S	161E

-2346	Jan 26	17:56:16	55223	5310	-53753	-33	N	-t	1.5043	0.1251	-0.9289	104.9	-	-	24N	35W
-2346	Feb 25	09:01:27	55221	5310	-53752	5	N	t-	-1.3600	0.3969	-0.6710	187.0	-	-	15N	99E
-2346	Jul 23	08:20:39	55210	5308	-53747	-28	N	-a	-1.4514	0.2020	-0.8119	127.4	-	-	25S	104E
-2346	Aug 21	19:25:55	55208	5308	-53746	10	N	a-	1.2474	0.5664	-0.4280	199.7	-	-	18S	61W
-2345	Jan 16	02:38:25	55197	5306	-53741	-23	P	-a	0.7277	1.5232	0.5225	296.4	151.5	-	24N	166W
-2345	Jul 12	14:12:41	55184	5303	-53735	-18	P	-t	-0.7577	1.4990	0.4370	323.1	151.2	-	25S	15E
-2344	Jan 05	17:03:34	55171	5301	-53729	-13	T+	pp	0.0153	2.8134	1.8462	320.1	211.1	98.4	24N	24W
-2344	Jun 30	14:51:14	55158	5298	-53723	-8	T-	pp	-0.0135	2.8702	1.7968	375.0	235.9	106.4	23S	5E
-2344	Dec 25	08:55:48	55145	5296	-53717	-3	P	a-	-0.6646	1.6272	0.6496	292.4	161.0	-	22N	96E
-2343	Jun 19	17:18:15	55133	5294	-53711	2	P	t-	0.7386	1.5214	0.4845	316.4	155.2	-	21S	33W
-2343	Nov 15	06:40:22	55122	5292	-53706	-31	N	-a	1.4732	0.1861	-0.8757	126.6	-	-	15N	127E
-2343	Dec 14	21:35:11	55120	5291	-53705	7	N	a-	-1.3990	0.3048	-0.7224	154.3	-	-	20N	94W
-2342	May 10	18:49:59	55109	5289	-53700	-26	N	-a	-1.1104	0.7983	-0.1576	225.5	-	-	12S	55W
-2342	Jun 09	02:46:28	55107	5289	-53699	12	N	a-	1.4445	0.1977	-0.7827	122.3	-	-	18S	175W
-2342	Nov 04	08:35:27	55096	5287	-53694	-21	P	-t	0.8420	1.3655	0.2614	320.3	121.5	-	10N	99E
-2341	Apr 30	11:47:28	55083	5284	-53688	-16	T	-p	-0.3600	2.1669	1.2275	308.3	198.3	66.5	8S	52E
-2341	Oct 24	07:35:46	55071	5282	-53682	-11	T+	pp	0.1670	2.6001	1.5038	372.4	229.9	96.6	5N	114E
-2340	Apr 19	04:11:33	55058	5280	-53676	-6	T	p-	0.3903	2.1249	1.1583	317.7	200.2	58.0	3S	167E
-2340	Oct 12	11:16:13	55045	5277	-53670	-1	P	a-	-0.5239	1.9191	0.8745	331.3	190.8	-	0S	60E
-2339	Mar 10	02:48:56	55034	5275	-53665	-34	Ne	-t	-1.5620	0.0191	-1.0347	41.9	-	-	10N	169W
-2339	Apr 08	15:34:09	55032	5275	-53664	4	N	t-	1.2030	0.6613	-0.3599	224.8	-	-	2N	2W
-2339	Sep 02	11:55:34	55021	5273	-53659	-29	N	-a	1.4855	0.1150	-0.8505	90.3	-	-	14S	51E
-2339	Oct 01	22:18:26	55019	5273	-53658	9	N	a-	-1.1731	0.6999	-0.2890	215.2	-	-	5S	105W
-2338	Feb 27	03:56:32	55008	5271	-53653	-24	P	-t	-0.8600	1.3210	0.2396	315.8	117.1	-	15N	175E
-2338	Aug 23	04:09:44	54996	5268	-53647	-19	P	-a	0.8174	1.3413	0.3749	273.4	127.4	-	18S	167E
-2337	Feb 16	05:00:58	54983	5266	-53641	-14	T-	pp	-0.1142	2.6781	1.6192	363.6	229.4	101.2	19N	159E
-2337	Aug 12	17:49:44	54970	5263	-53635	-9	T+	-p	0.1180	2.6450	1.6378	339.4	219.0	98.3	21S	38W
-2336	Feb 05	12:19:57	54957	5261	-53629	-4	P	a-	0.6197	1.7245	0.7173	312.1	174.1	-	22N	49E
-2336	Aug 01	01:03:42	54944	5259	-53623	1	P	t-	-0.6451	1.7039	0.6452	332.8	176.1	-	23S	147W
-2336	Dec 26	16:23:23	54934	5257	-53618	-32	N	-a	-1.3426	0.3777	-0.5890	159.1	-	-	22N	16W
-2335	Jan 25	02:03:25	54931	5256	-53617	6	N	a-	1.2852	0.4832	-0.4836	179.5	-	-	24N	158W
-2335	Jun 21	10:31:03	54921	5254	-53612	-27	N	-t	1.4825	0.1710	-0.8948	126.1	-	-	21S	69E
-2335	Jul 21	02:06:47	54919	5254	-53611	11	N	t-	-1.3943	0.3402	-0.7403	176.9	-	-	25S	164W
-2335	Dec 16	07:46:06	54908	5252	-53606	-22	P	-a	-0.7006	1.5675	0.5774	293.1	155.1	-	21N	112E
-2334	Jun 10	14:43:19	54895	5250	-53600	-17	P	-t	0.6800	1.6204	0.6005	316.6	167.1	-	19S	5E
-2334	Dec 05	18:39:06	54882	5247	-53594	-12	T-	pp	-0.0180	2.8482	1.8021	351.9	224.1	101.9	19N	52W
-2333	May 31	02:12:50	54869	5245	-53588	-7	T-	pp	-0.1144	2.6307	1.6650	327.1	215.1	98.1	18S	167W
-2333	Nov 24	22:10:27	54857	5242	-53582	-2	P	t-	0.6944	1.6329	0.5358	336.9	165.7	-	17N	106W
-2332	May 19	18:40:48	54844	5240	-53576	3	P	a-	-0.8481	1.2711	0.3319	264.7	119.9	-	15S	54W
-2332	Nov 12	21:09:11	54831	5238	-53570	8	N	t-	1.3629	0.4096	-0.6942	193.3	-	-	14N	91W

-2331 Apr 10	03:37:25	54820	5236	-53565	-25	P	-a	0.9432	1.1180	0.1365	265.6	82.3	-	1N	176E
-2331 Oct 03	08:23:51	54808	5233	-53559	-20	P	-a	-0.9054	1.2097	0.1841	280.3	96.2	-	4S	103E
-2330 Mar 30	12:56:42	54795	5231	-53553	-15	T+	pp	0.1975	2.5148	1.4767	356.3	225.0	94.4	5N	37E
-2330 Sep 22	21:10:53	54782	5229	-53547	-10	T-	-p	-0.1826	2.5111	1.5347	321.1	209.0	91.2	8S	89W
-2329 Mar 19	15:16:17	54769	5226	-53541	-5	P	t-	-0.5703	1.8490	0.7747	349.8	193.1	-	8N	3E
-2329 Sep 12	13:06:21	54756	5224	-53535	0	P	a-	0.4967	1.9298	0.9630	303.3	184.6	-	11S	32E
-2328 Feb 07	01:27:29	54745	5222	-53530	-33	Ne	-t	1.5375	0.0609	-0.9865	73.3	-	-	22N	149W
-2328 Mar 07	15:54:49	54743	5221	-53529	5	N	t-	-1.2965	0.5106	-0.5517	209.1	-	-	12N	7W
-2328 Aug 02	15:48:32	54733	5219	-53524	-28	N	-a	-1.5041	0.1087	-0.9120	94.7	-	-	24S	9W
-2328 Sep 01	03:30:30	54730	5219	-53523	10	N	a-	1.2232	0.6139	-0.3867	207.8	-	-	14S	176E
-2327 Jan 26	10:43:57	54720	5217	-53518	-23	P	-a	0.7530	1.4735	0.4790	292.0	145.6	-	23N	71E
-2327 Jul 22	21:05:13	54707	5215	-53512	-18	P	-t	-0.8215	1.3848	0.3173	315.8	131.5	-	24S	89W
-2326 Jan 16	01:31:59	54694	5212	-53506	-13	T+	pp	0.0346	2.7761	1.8124	319.5	211.0	98.3	24N	152W
-2326 Jul 11	21:26:56	54682	5210	-53500	-8	T-	pp	-0.0864	2.7375	1.6621	374.4	234.8	104.2	24S	95W
-2325 Jan 05	17:29:42	54669	5208	-53494	-3	P	a-	-0.6534	1.6474	0.6706	294.0	163.4	-	23N	33W
-2325 Jul 01	00:08:18	54656	5205	-53488	2	P	t-	0.6634	1.6588	0.6229	323.9	171.5	-	23S	137W
-2325 Nov 26	15:02:00	54645	5203	-53483	-31	N	-a	1.4763	0.1816	-0.8825	125.5	-	-	18N	0E
-2325 Dec 26	05:58:01	54643	5203	-53482	7	N	a-	-1.3958	0.3111	-0.7170	156.3	-	-	22N	139E
-2324 May 21	02:05:13	54632	5201	-53477	-26	N	-a	-1.1817	0.6665	-0.2872	208.2	-	-	16S	166W
-2324 Jun 19	09:59:35	54630	5201	-53476	12	N	a-	1.3705	0.3326	-0.6462	156.1	-	-	21S	75E
-2324 Nov 14	16:38:52	54620	5199	-53471	-21	P	-t	0.8437	1.3629	0.2578	320.5	120.9	-	14N	24W
-2323 May 10	19:10:27	54607	5196	-53465	-16	T	-a	-0.4344	2.0305	1.0909	304.3	192.0	43.9	12S	62W
-2323 Nov 03	15:41:17	54594	5194	-53459	-11	T+	pp	0.1686	2.5966	1.5013	371.6	229.4	96.4	9N	9W
-2322 Apr 30	11:24:32	54581	5191	-53453	-6	T	p-	0.3171	2.2604	1.2917	322.5	206.4	75.5	7S	56E
-2322 Oct 23	19:41:55	54568	5189	-53447	-1	P	a-	-0.5211	1.9235	0.8807	330.3	190.7	-	4N	69W
-2321 Apr 19	22:22:16	54556	5187	-53441	4	N	t-	1.1309	0.7947	-0.2286	244.2	-	-	2S	107W
-2321 Sep 13	20:22:35	54545	5185	-53436	-29	N	-a	1.5027	0.0842	-0.8831	77.4	-	-	10S	78W
-2321 Oct 13	06:59:01	54543	5184	-53435	9	N	a-	-1.1658	0.7131	-0.2753	216.4	-	-	1S	122E
-2320 Mar 09	10:41:22	54532	5182	-53430	-24	P	-t	-0.9237	1.2025	0.1246	304.9	85.9	-	11N	71E
-2320 Sep 02	12:26:29	54519	5180	-53424	-19	P	-a	0.8451	1.2928	0.3218	270.6	119.1	-	14S	41E
-2319 Feb 26	12:09:54	54507	5178	-53418	-14	T-	pp	-0.1672	2.5777	1.5251	360.8	227.2	97.3	15N	50E
-2319 Aug 23	01:40:01	54494	5175	-53412	-9	T+	-p	0.1538	2.5827	1.5689	340.5	218.5	95.9	18S	157W
-2318 Feb 15	20:04:56	54481	5173	-53406	-4	P	a-	0.5772	1.7992	0.7986	314.2	180.6	-	19N	69W
-2318 Aug 12	08:17:21	54468	5171	-53400	1	P	t-	-0.5984	1.7928	0.7278	339.0	184.9	-	21S	103E
-2317 Jan 07	00:58:46	54458	5169	-53395	-32	N	-a	-1.3569	0.3502	-0.6140	153.5	-	-	23N	146W
-2317 Feb 05	10:13:56	54455	5168	-53394	6	N	a-	1.2519	0.5419	-0.4203	188.6	-	-	22N	78E
-2317 Jul 02	17:05:01	54445	5166	-53389	-27	Ne	-t	1.5538	0.0406	-1.0260	62.1	-	-	22S	31W
-2317 Aug 01	08:58:39	54443	5166	-53388	11	N	t-	-1.3369	0.4473	-0.6365	201.0	-	-	24S	92E
-2317 Dec 27	16:20:54	54432	5164	-53383	-22	P	-a	-0.7117	1.5471	0.5569	292.6	153.2	-	23N	17W
-2316 Jun 20	21:37:29	54419	5162	-53377	-17	P	-t	0.7523	1.4869	0.4686	306.9	150.2	-	21S	100W



-2316	Dec 16	02:59:32	54406	5159	-53371	-12	T-	pp	-0.0231	2.8395	1.7921	353.1	224.7	102.1	22N	178W
-2315	Jun 10	09:28:49	54394	5157	-53365	-7	T-	pp	-0.0402	2.7661	1.8020	326.8	215.7	100.4	20S	81E
-2315	Dec 05	06:13:06	54381	5154	-53359	-2	P	t-	0.6910	1.6393	0.5418	337.9	166.8	-	20N	132E
-2314	May 31	02:03:56	54368	5152	-53353	3	P	a-	-0.7739	1.4077	0.4679	274.1	139.5	-	18S	168W
-2314	Nov 24	05:12:57	54355	5150	-53347	8	N	t-	1.3595	0.4151	-0.6870	194.2	-	-	17N	146E
-2313	Apr 21	10:44:32	54345	5148	-53342	-25	N	-a	1.0216	0.9753	-0.0083	252.9	-	-	3S	66E
-2313	May 20	18:50:41	54343	5147	-53341	13	Nb	a-	-1.5256	0.0381	-0.9210	53.2	-	-	16S	59W
-2313	Oct 14	16:52:44	54332	5145	-53336	-20	P	-a	-0.9074	1.2053	0.1809	279.0	95.1	-	0N	27W
-2312	Apr 09	19:40:30	54319	5143	-53330	-15	T	-t	0.2759	2.3715	1.3321	354.8	221.3	83.7	0N	67W
-2312	Oct 03	05:49:49	54306	5141	-53324	-10	T-	-p	-0.1919	2.4942	1.5172	320.4	208.2	90.2	4S	139E
-2311	Mar 29	21:47:23	54294	5138	-53318	-5	P	t-	-0.4941	1.9879	0.9156	356.2	204.8	-	4N	98W
-2311	Sep 22	21:39:39	54281	5136	-53312	0	P	a-	0.4820	1.9587	0.9883	304.9	186.3	-	7S	99W
-2310	Mar 18	22:43:21	54268	5134	-53306	5	N	t-	-1.2280	0.6335	-0.4233	229.4	-	-	8N	111W
-2310	Aug 13	23:21:57	54258	5132	-53301	-28	Ne	-a	-1.5514	0.0254	-1.0021	46.3	-	-	22S	123W
-2310	Sep 12	11:41:03	54255	5131	-53300	10	N	a-	1.2045	0.6513	-0.3554	214.1	-	-	11S	51E
-2309	Feb 06	18:43:44	54245	5129	-53295	-23	P	-a	0.7840	1.4136	0.4252	286.8	138.0	-	22N	50W
-2309	Aug 03	04:04:46	54232	5127	-53289	-18	P	-t	-0.8789	1.2822	0.2091	308.5	108.7	-	23S	165E
-2308	Jan 27	09:52:03	54219	5125	-53283	-13	T+	pp	0.0613	2.7253	1.7653	318.8	210.7	97.9	23N	82E
-2308	Jul 22	04:12:41	54207	5122	-53277	-8	T-	pp	-0.1514	2.6193	1.5416	373.1	232.6	99.7	24S	162E
-2307	Jan 16	01:55:07	54194	5120	-53271	-3	P	a-	-0.6352	1.6803	0.7043	296.2	166.8	-	23N	160W
-2307	Jul 11	07:08:05	54181	5118	-53265	2	P	t-	0.5951	1.7838	0.7486	329.5	183.5	-	23S	117E
-2307	Dec 06	23:18:39	54171	5116	-53260	-31	N	-a	1.4829	0.1704	-0.8954	122.1	-	-	21N	125W
-2306	Jan 05	14:12:24	54168	5115	-53259	7	N	a-	-1.3865	0.3285	-0.7002	160.9	-	-	23N	14E
-2306	Jun 01	09:24:06	54158	5113	-53254	-26	N	-a	-1.2506	0.5393	-0.4130	189.1	-	-	19S	82E
-2306	Jun 30	17:20:16	54156	5113	-53253	12	N	a-	1.3014	0.4589	-0.5188	180.6	-	-	22S	37W
-2306	Nov 26	00:40:11	54145	5111	-53248	-21	P	-t	0.8468	1.3574	0.2521	320.3	119.7	-	18N	146W
-2305	May 22	02:32:09	54132	5109	-53242	-16	P	-a	-0.5097	1.8927	0.9523	299.6	184.1	-	15S	175W
-2305	Nov 14	23:49:09	54120	5106	-53236	-11	T+	pp	0.1689	2.5952	1.5018	370.7	229.1	96.3	13N	134W
-2304	May 10	18:33:49	54107	5104	-53230	-6	T+	p-	0.2414	2.4007	1.4292	326.8	211.6	87.4	11S	55W
-2304	Nov 03	04:11:29	54094	5102	-53224	-1	P	a-	-0.5205	1.9233	0.8829	329.1	190.3	-	9N	161E
-2303	Apr 30	05:05:20	54081	5099	-53218	4	N	t-	1.0552	0.9349	-0.0910	262.1	-	-	7S	149E
-2303	Sep 24	04:58:21	54071	5097	-53213	-29	N	-a	1.5137	0.0649	-0.9040	68.0	-	-	6S	151E
-2303	Oct 23	15:45:32	54069	5097	-53212	9	N	a-	-1.1627	0.7184	-0.2693	216.6	-	-	4N	12W
-2302	Mar 20	17:17:43	54058	5095	-53207	-24	Nx	-t	-0.9939	1.0719	-0.0026	291.6	-	-	7N	31W
-2302	Sep 13	20:50:42	54045	5093	-53201	-19	P	-a	0.8663	1.2561	0.2805	268.6	112.1	-	10S	87W
-2301	Mar 09	19:11:31	54033	5090	-53195	-14	T-	pp	-0.2271	2.4646	1.4183	357.3	223.9	90.7	12N	58W
-2301	Sep 03	09:37:45	54020	5088	-53189	-9	T+	-p	0.1823	2.5337	1.5134	341.6	217.9	93.4	15S	82E
-2300	Feb 27	03:42:15	54007	5086	-53183	-4	P	a-	0.5275	1.8871	0.8930	316.6	187.4	-	16N	175E
-2300	Aug 22	15:39:47	53994	5083	-53177	1	P	t-	-0.5595	1.8672	0.7961	344.2	191.6	-	19S	9W

# 23RD CENTURY BCE

In the 23rd century BCE the total number of lunar eclipses was 240 lunar eclipses: 87 penumbral lunar eclipses, 81 partial lunar eclipses, 72 total lunar eclipses (43 central total lunar eclipses, 29 non-central total lunar eclipses).

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-2299 Jan 17	09:27:49	53984	5081	-53172	-32	N	-a	-1.3764	0.3131	-0.6484	145.6	-	-	22N	86E
-2299 Feb 15	18:17:47	53982	5081	-53171	6	N	a-	1.2130	0.6110	-0.3468	198.5	-	-	20N	44W
-2299 Aug 11	15:58:56	53969	5079	-53165	11	N	t-	-1.2857	0.5429	-0.5443	219.6	-	-	22S	14W
-2298 Jan 07	00:49:51	53958	5077	-53160	-22	P	-a	-0.7272	1.5186	0.5285	291.6	150.3	-	23N	145W
-2298 Jul 02	04:38:58	53946	5074	-53154	-17	P	-t	0.8193	1.3633	0.3464	297.0	131.1	-	23S	153E
-2298 Dec 27	11:13:32	53933	5072	-53148	-12	T-	pp	-0.0330	2.8217	1.7735	354.2	225.3	102.2	23N	57E
-2297 Jun 21	16:49:38	53920	5070	-53142	-7	T+	pp	0.0308	2.7828	1.8197	325.9	215.2	100.4	22S	30W
-2297 Dec 16	14:10:16	53907	5067	-53136	-2	P	t-	0.6834	1.6531	0.5560	339.2	168.8	-	22N	12E
-2296 Jun 10	09:30:48	53895	5065	-53130	3	P	a-	-0.7024	1.5394	0.5985	282.2	154.6	-	21S	79E
-2296 Dec 04	13:12:47	53882	5063	-53124	8	N	t-	1.3524	0.4267	-0.6727	196.3	-	-	21N	25E
-2295 May 01	17:49:13	53871	5061	-53119	-25	N	-a	1.1009	0.8311	-0.1551	238.0	-	-	7S	43W
-2295 May 31	02:05:46	53869	5060	-53118	13	N	a-	-1.4578	0.1642	-0.7983	109.5	-	-	19S	170W
-2295 Oct 25	01:26:25	53859	5058	-53113	-20	P	-a	-0.9063	1.2064	0.1838	278.1	95.5	-	5N	158W
-2294 Apr 21	02:18:03	53846	5056	-53107	-15	T	-t	0.3586	2.2208	1.1796	352.1	215.6	65.1	4S	170W
-2294 Oct 14	14:34:35	53833	5054	-53101	-10	T-	-p	-0.1970	2.4850	1.5077	319.8	207.7	89.5	1N	5E
-2293 Apr 10	04:10:54	53821	5051	-53095	-5	T	t-	-0.4116	2.1384	1.0678	362.0	215.0	42.4	0S	163E
-2293 Oct 04	06:19:50	53808	5049	-53089	0	T	a-	0.4729	1.9771	1.0034	306.2	187.3	8.7	3S	129E
-2292 Mar 29	05:24:20	53795	5047	-53083	5	N	t-	-1.1520	0.7703	-0.2813	248.6	-	-	4N	145E
-2292 Sep 22	20:00:05	53782	5044	-53077	10	N	a-	1.1932	0.6749	-0.3375	218.4	-	-	7S	76W
-2291 Feb 17	02:35:08	53772	5042	-53072	-23	P	-a	0.8230	1.3391	0.3567	280.3	127.3	-	19N	169W
-2291 Aug 13	11:12:29	53759	5040	-53066	-18	P	-t	-0.9291	1.1929	0.1143	301.5	81.6	-	21S	57E

-2290	Feb 06	18:04:36	53747	5038	-53060	-13	T+	-p	0.0947	2.6623	1.7058	318.0	210.2	96.8	21N	42W
-2290	Aug 02	11:07:26	53734	5035	-53054	-8	T-	pp	-0.2097	2.5134	1.4335	371.4	229.7	93.4	23S	57E
-2289	Jan 27	10:11:56	53721	5033	-53048	-3	P	a-	-0.6106	1.7249	0.7500	299.0	171.2	-	22N	75E
-2289	Jul 22	14:16:32	53708	5031	-53042	2	P	h-	0.5327	1.8981	0.8633	333.9	192.5	-	23S	9E
-2289	Dec 18	07:30:46	53698	5029	-53037	-31	N	-h	1.4923	0.1536	-0.9132	116.4	-	-	24N	111E
-2288	Jan 16	22:18:12	53696	5028	-53036	7	N	h-	-1.3712	0.3567	-0.6722	167.8	-	-	22N	108W
-2288	Jun 11	16:46:14	53685	5026	-53031	-26	N	-a	-1.3173	0.4165	-0.5350	167.8	-	-	22S	31W
-2288	Jul 11	00:48:21	53683	5026	-53030	12	N	a-	1.2374	0.5760	-0.4012	199.4	-	-	23S	150W
-2288	Dec 06	08:38:41	53672	5024	-53025	-21	P	-t	0.8519	1.3477	0.2430	319.6	117.8	-	21N	93E
-2287	Jun 01	09:55:53	53660	5022	-53019	-16	P	-a	-0.5832	1.7587	0.8166	294.3	174.6	-	19S	72E
-2287	Nov 25	07:57:50	53647	5019	-53013	-11	T+	pp	0.1692	2.5932	1.5025	369.7	228.7	96.2	17N	102E
-2286	May 22	01:41:06	53634	5017	-53007	-6	T+	pp	0.1648	2.5428	1.5680	330.3	215.5	95.3	15S	164W
-2286	Nov 14	12:43:36	53622	5015	-53001	-1	P	a-	-0.5212	1.9205	0.8832	327.7	189.8	-	13N	31E
-2285	May 11	11:44:46	53609	5012	-52995	4	P	t-	0.9770	1.0799	0.0509	278.6	53.4	-	11S	46E
-2285	Oct 05	13:40:04	53599	5010	-52990	-29	N	-a	1.5203	0.0536	-0.9167	61.8	-	-	1S	18E
-2285	Nov 04	00:34:23	53596	5010	-52989	9	N	a-	-1.1614	0.7202	-0.2662	216.4	-	-	8N	147W
-2284	Mar 30	23:47:30	53586	5008	-52984	-24	N	-t	-1.0691	0.9323	-0.1392	275.6	-	-	3N	131W
-2284	Sep 24	05:22:01	53573	5006	-52978	-19	P	-a	0.8814	1.2306	0.2507	267.3	106.6	-	6S	143E
-2283	Mar 20	02:08:06	53560	5003	-52972	-14	T	pp	-0.2919	2.3428	1.3024	353.0	219.4	80.4	8N	165W
-2283	Sep 13	17:41:55	53548	5001	-52966	-9	T+	-p	0.2046	2.4960	1.4694	342.7	217.4	91.1	11S	42W
-2282	Mar 09	11:13:41	53535	4999	-52960	-4	P	a-	0.4719	1.9860	0.9980	319.0	193.8	-	12N	59E
-2282	Sep 02	23:10:21	53522	4996	-52954	1	P	t-	-0.5280	1.9280	0.8509	348.4	196.6	-	15S	123W
-2281	Jan 28	17:47:16	53512	4995	-52949	-32	N	-a	-1.4038	0.2614	-0.6973	133.7	-	-	21N	40W
-2281	Feb 27	02:12:02	53510	4994	-52948	6	N	a-	1.1662	0.6948	-0.2589	209.4	-	-	17N	165W
-2281	Aug 22	23:10:24	53497	4992	-52942	11	N	t-	-1.2430	0.6228	-0.4676	233.5	-	-	19S	124W
-2280	Jan 18	09:08:57	53487	4990	-52937	-22	P	-a	-0.7504	1.4761	0.4862	289.7	145.5	-	23N	89E
-2280	Jul 12	11:49:55	53474	4988	-52931	-17	P	-t	0.8796	1.2522	0.2361	287.1	109.6	-	23S	44E
-2279	Jan 06	19:18:10	53461	4985	-52925	-12	T-	pp	-0.0499	2.7910	1.7424	355.3	225.8	102.2	24N	65W
-2279	Jul 02	00:17:38	53449	4983	-52919	-7	T+	pp	0.0965	2.6621	1.6993	324.4	213.8	98.3	23S	144W
-2279	Dec 26	22:01:49	53436	4981	-52913	-2	P	t-	0.6715	1.6743	0.5783	340.8	171.7	-	24N	107W
-2278	Jun 21	16:59:47	53423	4978	-52907	3	P	a-	-0.6328	1.6680	0.7253	289.3	166.7	-	23S	35W
-2278	Dec 15	21:11:10	53411	4976	-52901	8	N	t-	1.3436	0.4411	-0.6549	198.8	-	-	23N	96W
-2277	May 13	00:49:10	53400	4974	-52896	-25	N	-a	1.1827	0.6826	-0.3069	219.9	-	-	11S	151W
-2277	Jun 11	09:20:31	53398	4974	-52895	13	N	a-	-1.3905	0.2897	-0.6768	144.3	-	-	22S	79E
-2277	Nov 05	10:04:26	53387	4972	-52890	-20	P	-a	-0.9027	1.2119	0.1917	277.6	97.2	-	9N	70E
-2276	May 01	08:50:33	53375	4969	-52884	-15	T	-t	0.4444	2.0643	1.0211	348.1	207.4	23.5	8S	89E
-2276	Oct 24	23:24:24	53362	4967	-52878	-10	T-	-p	-0.1981	2.4830	1.5057	319.4	207.4	89.3	5N	130W
-2275	Apr 20	10:31:27	53349	4965	-52872	-5	T	tp	-0.3264	2.2940	1.2248	366.8	223.2	73.3	4S	65E
-2275	Oct 14	15:04:22	53337	4962	-52866	0	T	p-	0.4677	1.9880	1.0113	307.2	188.0	15.8	2N	5W
-2274	Apr 09	12:03:21	53324	4960	-52860	5	N	t-	-1.0732	0.9124	-0.1344	265.6	-	-	0S	42E

-2274	Oct 04	04:24:04	53312	4958	-52854	10	N	a-	1.1866	0.6898	-0.3280	221.4	-	-	2S	155E
-2273	Feb 28	10:19:25	53301	4956	-52849	-23	P	-a	0.8685	1.2526	0.2761	272.7	113.1	-	16N	73E
-2273	Aug 24	18:29:08	53288	4954	-52843	-18	P	-t	-0.9714	1.1180	0.0340	295.1	45.1	-	19S	54W
-2272	Feb 18	02:08:42	53276	4951	-52837	-13	T+	-p	0.1353	2.5861	1.6330	316.9	209.3	94.9	18N	165W
-2272	Aug 12	18:13:12	53263	4949	-52831	-8	T-	pp	-0.2593	2.4237	1.3416	369.4	226.5	85.8	21S	51W
-2271	Feb 06	18:18:56	53250	4947	-52825	-3	P	a-	-0.5784	1.7837	0.8096	302.5	176.5	-	20N	48W
-2271	Aug 01	21:36:28	53238	4944	-52819	2	P	h-	0.4787	1.9972	0.9625	336.9	199.0	-	22S	102W
-2271	Dec 28	15:35:00	53227	4942	-52814	-31	N	-h	1.5073	0.1262	-0.9410	106.1	-	-	25N	11W
-2270	Jan 27	06:13:44	53225	4942	-52813	7	N	h-	-1.3484	0.3985	-0.6305	177.3	-	-	21N	132E
-2270	Jun 23	00:12:58	53215	4940	-52808	-26	N	-a	-1.3807	0.3000	-0.6514	143.7	-	-	24S	144W
-2270	Jul 22	08:24:38	53213	4940	-52807	12	N	a-	1.1792	0.6828	-0.2943	214.1	-	-	23S	95E
-2270	Dec 17	16:32:01	53202	4938	-52802	-21	P	-t	0.8611	1.3301	0.2269	318.2	114.1	-	23N	27W
-2269	Jun 12	17:21:13	53189	4935	-52796	-16	P	-a	-0.6553	1.6275	0.6832	288.3	163.4	-	21S	42W
-2269	Dec 06	16:03:28	53177	4933	-52790	-11	T+	pp	0.1727	2.5851	1.4980	368.4	228.2	95.9	20N	20W
-2268	Jun 01	08:48:11	53164	4931	-52784	-6	T+	pp	0.0889	2.6843	1.7053	333.2	218.1	99.9	18S	87E
-2268	Nov 24	21:16:15	53152	4929	-52778	-1	P	a-	-0.5213	1.9185	0.8849	326.3	189.4	-	16N	99W
-2267	May 21	18:21:50	53139	4926	-52772	4	P	t-	0.8976	1.2275	0.1948	293.5	102.7	-	14S	56W
-2267	Oct 15	22:27:32	53128	4924	-52767	-29	N	-a	1.5228	0.0495	-0.9218	59.5	-	-	3N	117W
-2267	Nov 14	09:25:21	53126	4924	-52766	9	N	a-	-1.1614	0.7192	-0.2655	215.8	-	-	12N	79E
-2266	Apr 11	06:11:38	53116	4922	-52761	-24	N	-t	-1.1487	0.7848	-0.2838	256.3	-	-	1S	129E
-2266	Oct 05	13:59:48	53103	4920	-52755	-19	P	-a	0.8907	1.2156	0.2316	266.9	102.9	-	2S	11E
-2265	Mar 31	08:57:53	53091	4917	-52749	-14	T	-p	-0.3630	2.2094	1.1747	347.8	213.3	63.8	4N	89E
-2265	Sep 25	01:53:42	53078	4915	-52743	-9	T+	-p	0.2196	2.4716	1.4388	344.0	217.2	89.3	7S	167W
-2264	Mar 19	18:39:04	53065	4913	-52737	-4	T	a-	0.4105	2.0957	1.1136	321.3	199.8	50.2	8N	55W
-2264	Sep 13	06:48:47	53053	4910	-52731	1	P	t-	-0.5035	1.9757	0.8931	351.8	200.2	-	12S	120E
-2263	Feb 08	01:59:28	53042	4909	-52726	-32	N	-a	-1.4372	0.1989	-0.7573	117.2	-	-	19N	164W
-2263	Mar 09	10:00:34	53040	4908	-52725	6	N	a-	1.1144	0.7879	-0.1620	220.5	-	-	13N	76E
-2263	Sep 02	06:31:24	53027	4906	-52719	11	N	t-	-1.2076	0.6894	-0.4039	244.1	-	-	16S	124E
-2262	Jan 28	17:20:36	53017	4904	-52714	-22	P	-a	-0.7790	1.4232	0.4338	287.0	138.9	-	22N	35W
-2262	Jul 23	19:09:00	53004	4902	-52708	-17	P	-h	0.9340	1.1520	0.1366	277.5	84.3	-	23S	67W
-2261	Jan 18	03:14:29	52992	4899	-52702	-12	T-	pp	-0.0725	2.7494	1.7008	356.2	226.2	101.8	24N	175E
-2261	Jul 13	07:52:47	52979	4897	-52696	-7	T+	pp	0.1566	2.5518	1.5890	322.6	211.7	94.5	24S	101E
-2260	Jan 07	05:43:48	52966	4895	-52690	-2	P	t-	0.6525	1.7084	0.6141	343.1	176.1	-	25N	137E
-2260	Jul 02	00:35:19	52954	4892	-52684	3	P	a-	-0.5688	1.7866	0.8415	295.2	176.2	-	24S	150W
-2260	Dec 26	05:03:01	52941	4890	-52678	8	N	t-	1.3296	0.4647	-0.6272	203.1	-	-	24N	145E
-2259	May 23	07:48:47	52931	4888	-52673	-25	N	-a	1.2636	0.5362	-0.4572	198.6	-	-	14S	101E
-2259	Jun 21	16:39:00	52929	4888	-52672	13	N	a-	-1.3268	0.4090	-0.5621	170.2	-	-	24S	32W
-2259	Nov 15	18:43:07	52918	4886	-52667	-20	P	-a	-0.8991	1.2171	0.1998	277.1	98.8	-	13N	62W
-2258	May 12	15:20:10	52906	4884	-52661	-15	P	-t	0.5313	1.9062	0.8603	342.8	196.6	-	12S	11W
-2258	Nov 05	08:16:50	52893	4881	-52655	-10	T-	-p	-0.1975	2.4838	1.5071	319.0	207.2	89.3	10N	95E

-2257 May 01	16:46:35	52880	4879	-52649	-5	T-	pp	-0.2366	2.4583	1.3901	370.5	229.5	90.8	8S	32W
-2257 Oct 25	23:53:35	52868	4877	-52643	0	T	p-	0.4668	1.9909	1.0117	307.9	188.2	16.1	6N	140W
-2256 Apr 19	18:38:01	52855	4874	-52637	5	P	t-	-0.9896	1.0635	0.0212	281.1	35.0	-	5S	59W
-2256 Oct 14	12:53:19	52843	4872	-52631	10	N	a-	1.1850	0.6953	-0.3275	223.1	-	-	2N	25E
-2255 Mar 10	17:56:36	52832	4870	-52626	-23	P	-a	0.9205	1.1543	0.1834	263.6	93.1	-	12N	44W
-2255 Sep 04	01:55:03	52820	4868	-52620	-18	Nx	-t	-1.0054	1.0581	-0.0310	289.7	-	-	15S	167W
-2254 Feb 28	10:04:43	52807	4866	-52614	-13	T+	-p	0.1828	2.4973	1.5474	315.6	207.9	91.6	15N	74E
-2254 Aug 24	01:28:29	52794	4863	-52608	-8	T	-p	-0.3015	2.3473	1.2631	367.3	223.2	77.4	18S	161W
-2253 Feb 18	02:17:08	52782	4861	-52602	-3	P	a-	-0.5394	1.8548	0.8815	306.3	182.4	-	18N	170W
-2253 Aug 13	05:06:31	52769	4859	-52596	2	T	a-	0.4318	2.0833	1.0485	339.0	203.8	34.5	20S	144E
-2252 Jan 08	23:30:49	52759	4857	-52591	-31	N	-h	1.5282	0.0878	-0.9793	89.0	-	-	25N	130W
-2252 Feb 07	13:58:46	52757	4856	-52590	7	N	h-	-1.3181	0.4542	-0.5749	188.9	-	-	19N	15E
-2252 Jul 03	07:45:51	52746	4854	-52585	-26	N	-a	-1.4397	0.1921	-0.7598	116.0	-	-	25S	101E
-2252 Aug 01	16:10:17	52744	4854	-52584	12	N	a-	1.1278	0.7773	-0.2001	225.7	-	-	21S	23W
-2252 Dec 28	00:19:55	52734	4852	-52579	-21	P	-t	0.8747	1.3040	0.2029	315.9	108.4	-	24N	144W
-2251 Jun 23	00:50:01	52721	4850	-52573	-16	P	-a	-0.7241	1.5027	0.5555	281.8	150.5	-	23S	155W
-2251 Dec 17	00:06:42	52708	4848	-52567	-11	T+	pp	0.1788	2.5718	1.4889	366.9	227.6	95.3	22N	142W
-2250 Jun 12	15:56:28	52696	4845	-52561	-6	T+	pp	0.0147	2.8228	1.8391	335.3	219.5	101.8	21S	22W
-2250 Dec 06	05:47:14	52683	4843	-52555	-1	P	a-	-0.5194	1.9197	0.8904	325.0	189.2	-	19N	132E
-2249 Jun 02	00:58:06	52671	4841	-52549	4	P	t-	0.8182	1.3752	0.3384	306.8	133.0	-	17S	158W
-2249 Oct 27	07:18:42	52660	4839	-52544	-29	N	-a	1.5226	0.0501	-0.9219	59.8	-	-	8N	108E
-2249 Nov 25	18:15:28	52658	4838	-52543	9	N	a-	-1.1606	0.7196	-0.2629	215.4	-	-	16N	56W
-2248 Apr 21	12:32:55	52648	4837	-52538	-24	N	-t	-1.2303	0.6340	-0.4322	233.4	-	-	6S	31E
-2248 Oct 15	22:41:24	52635	4834	-52532	-19	P	-a	0.8966	1.2067	0.2190	266.9	100.4	-	3N	122W
-2247 Apr 10	15:45:42	52623	4832	-52526	-14	T	-t	-0.4367	2.0716	1.0422	341.6	205.6	32.6	1S	16W
-2247 Oct 05	10:10:58	52610	4830	-52520	-9	T+	-p	0.2293	2.4566	1.4183	345.4	217.2	88.1	2S	66E
-2246 Mar 31	01:59:12	52597	4827	-52514	-4	T	a-	0.3437	2.2155	1.2388	323.4	205.0	69.7	4N	168W
-2246 Sep 24	14:34:48	52585	4825	-52508	1	P	t-	-0.4858	2.0109	0.9232	354.5	202.8	-	7S	1E
-2245 Feb 19	10:02:06	52574	4823	-52503	-32	N	-a	-1.4782	0.1223	-0.8314	92.6	-	-	16N	73E
-2245 Mar 20	17:41:10	52572	4823	-52502	6	N	a-	1.0559	0.8937	-0.0529	232.0	-	-	9N	42W
-2245 Sep 13	14:03:24	52560	4821	-52496	11	N	t-	-1.1805	0.7403	-0.3555	251.7	-	-	12S	9E
-2244 Feb 09	01:20:25	52549	4819	-52491	-22	P	-a	-0.8167	1.3540	0.3649	283.0	129.1	-	20N	156W
-2244 Aug 03	02:39:46	52537	4816	-52485	-17	P	-h	0.9797	1.0681	0.0529	268.7	52.9	-	21S	179E
-2243 Jan 28	11:00:11	52524	4814	-52479	-12	T-	pp	-0.1029	2.6937	1.6452	356.9	226.3	100.8	22N	58E
-2243 Jul 23	15:35:43	52512	4812	-52473	-7	T+	-p	0.2107	2.4529	1.4895	320.6	209.2	89.6	23S	16W
-2242 Jan 17	13:18:06	52499	4809	-52467	-2	P	t-	0.6275	1.7532	0.6610	345.8	181.5	-	24N	22E
-2242 Jul 13	08:15:40	52487	4807	-52461	3	P	a-	-0.5093	1.8973	0.9492	300.2	183.7	-	24S	93E
-2241 Jan 06	12:49:00	52474	4805	-52455	8	N	t-	1.3100	0.4983	-0.5888	209.1	-	-	25N	28E
-2241 Jun 03	14:46:12	52464	4803	-52450	-25	N	-a	1.3450	0.3891	-0.6088	172.3	-	-	17S	5W
-2241 Jul 02	23:59:57	52462	4803	-52449	13	N	a-	-1.2656	0.5239	-0.4523	191.3	-	-	25S	144W

-2241	Nov 27	03:23:02	52451	4801	-52444	-20	P	-a	-0.8954	1.2220	0.2082	276.4	100.5	-	16N	167E
-2240	May 22	21:48:08	52439	4798	-52438	-15	P	-t	0.6188	1.7472	0.6982	336.1	182.6	-	15S	111W
-2240	Nov 15	17:10:07	52426	4796	-52432	-10	T-	-p	-0.1965	2.4851	1.5094	318.6	207.1	89.3	14N	41W
-2239	May 11	23:02:06	52414	4794	-52426	-5	T-	pp	-0.1468	2.6227	1.5551	372.9	233.7	100.9	12S	129W
-2239	Nov 05	08:44:49	52401	4792	-52420	0	T	p-	0.4679	1.9900	1.0086	308.5	188.3	13.9	10N	85E
-2238	May 01	01:11:50	52388	4789	-52414	5	P	t-	-0.9040	1.2186	0.1803	294.7	99.5	-	9S	161W
-2238	Oct 25	21:25:27	52376	4787	-52408	10	N	a-	1.1863	0.6950	-0.3322	223.9	-	-	7N	105W
-2237	Mar 22	01:28:15	52365	4785	-52403	-23	P	-a	0.9778	1.0466	0.0809	253.0	62.6	-	8N	160W
-2237	Sep 15	09:29:08	52353	4783	-52397	-18	Nx	-t	-1.0327	1.0105	-0.0832	285.2	-	-	11S	77E
-2236	Mar 10	17:52:44	52340	4781	-52391	-13	T+	-p	0.2373	2.3960	1.4488	313.8	205.6	86.3	11N	46W
-2236	Sep 03	08:55:14	52328	4778	-52385	-8	T	-p	-0.3349	2.2868	1.2008	365.4	220.1	69.0	15S	85E
-2235	Feb 28	10:06:05	52315	4776	-52379	-3	P	a-	-0.4931	1.9394	0.9666	310.5	188.6	-	14N	71E
-2235	Aug 23	12:47:01	52303	4774	-52373	2	T	a-	0.3924	2.1556	1.1208	340.3	207.1	53.1	18S	27E
-2234	Jan 19	07:16:31	52292	4772	-52368	-31	Ne	-t	1.5566	0.0356	-1.0311	57.1	-	-	25N	112E
-2234	Feb 17	21:32:58	52290	4771	-52367	7	N	t-	-1.2797	0.5246	-0.5045	202.3	-	-	17N	101W
-2234	Jul 14	15:25:43	52280	4770	-52362	-26	N	-a	-1.4937	0.0935	-0.8594	81.5	-	-	25S	15W
-2234	Aug 13	00:05:28	52278	4769	-52361	12	N	a-	1.0833	0.8592	-0.1187	234.7	-	-	20S	143W
-2233	Jan 08	07:58:16	52267	4767	-52356	-21	P	-t	0.8958	1.2639	0.1657	312.3	98.5	-	25N	101E
-2233	Jul 04	08:23:09	52255	4765	-52350	-16	P	-a	-0.7890	1.3854	0.4348	274.9	135.8	-	24S	90E
-2233	Dec 28	08:03:48	52242	4763	-52344	-11	T+	pp	0.1907	2.5475	1.4695	365.2	226.7	94.1	24N	98E
-2232	Jun 22	23:07:21	52230	4760	-52338	-6	T-	pp	-0.0563	2.7490	1.7601	336.7	219.8	101.3	23S	132W
-2232	Dec 16	14:14:34	52217	4758	-52332	-1	P	a-	-0.5137	1.9277	0.9033	323.9	189.6	-	22N	4E
-2231	Jun 12	07:35:38	52205	4756	-52326	4	P	t-	0.7404	1.5204	0.4790	318.6	155.3	-	20S	101E
-2231	Nov 06	16:13:18	52194	4754	-52321	-29	N	-a	1.5203	0.0545	-0.9178	62.3	-	-	12N	28W
-2231	Dec 06	03:04:50	52192	4754	-52320	9	N	a-	-1.1590	0.7212	-0.2585	215.1	-	-	19N	170E
-2230	May 02	18:50:02	52182	4752	-52315	-24	N	-t	-1.3150	0.4775	-0.5865	205.3	-	-	10S	66W
-2230	Jun 01	09:33:37	52180	4751	-52314	14	Nb	t-	1.5220	0.1002	-0.9687	97.8	-	-	17S	71E
-2230	Oct 27	07:27:39	52169	4749	-52309	-19	P	-a	0.8983	1.2053	0.2143	267.6	99.6	-	7N	104E
-2229	Apr 21	22:29:50	52157	4747	-52303	-14	P	-t	-0.5143	1.9265	0.9022	334.3	195.6	-	5S	120W
-2229	Oct 16	18:33:15	52144	4745	-52297	-9	T+	-p	0.2340	2.4505	1.4072	346.8	217.4	87.4	2N	62W
-2228	Apr 10	09:15:48	52132	4743	-52291	-4	T	p-	0.2731	2.3426	1.3708	325.0	209.4	82.8	0S	80E
-2228	Oct 04	22:27:47	52119	4740	-52285	1	P	t-	-0.4741	2.0346	0.9424	356.5	204.5	-	3S	120W
-2227	Mar 01	17:58:11	52109	4739	-52280	-32	Ne	-a	-1.5244	0.0365	-0.9151	51.0	-	-	13N	48W
-2227	Mar 31	01:17:39	52107	4738	-52279	6	P	a-	0.9938	1.0061	0.0623	242.9	54.0	-	5N	159W
-2227	Sep 23	21:42:46	52094	4736	-52273	11	N	t-	-1.1590	0.7808	-0.3171	257.3	-	-	8S	108W
-2226	Feb 19	09:12:31	52084	4734	-52268	-22	P	-a	-0.8599	1.2746	0.2857	277.9	115.9	-	17N	84E
-2226	Aug 14	10:20:00	52071	4732	-52262	-17	N	-h	1.0183	0.9972	-0.0179	260.7	-	-	19S	62E
-2225	Feb 08	18:34:48	52059	4729	-52256	-12	T-	pp	-0.1414	2.6229	1.5746	357.2	225.9	98.6	20N	57W
-2225	Aug 03	23:27:36	52046	4727	-52250	-7	T+	-p	0.2578	2.3671	1.4027	318.5	206.4	83.8	22S	135W
-2224	Jan 28	20:41:21	52034	4725	-52244	-2	P	t-	0.5939	1.8135	0.7239	349.2	188.1	-	23N	89W

-2224	Jul 23	16:03:38	52021	4723	-52238	3	T	a-	-0.4562	1.9964	1.0449	304.3	189.5	31.2	24S	25W
-2223	Jan 16	20:26:17	52009	4720	-52232	8	N	t-	1.2829	0.5454	-0.5365	217.0	-	-	25N	87W
-2223	Jun 13	21:46:23	51999	4718	-52227	-25	N	-a	1.4228	0.2488	-0.7541	140.3	-	-	20S	112W
-2223	Jul 13	07:27:05	51996	4718	-52226	13	N	a-	-1.2101	0.6285	-0.3533	208.3	-	-	25S	103E
-2223	Dec 07	12:00:26	51986	4716	-52221	-20	P	-a	-0.8944	1.2218	0.2121	275.4	101.1	-	19N	36E
-2222	Jun 03	04:14:52	51974	4714	-52215	-15	P	-t	0.7061	1.5888	0.5363	327.9	164.8	-	18S	150E
-2222	Nov 27	02:02:54	51961	4712	-52209	-10	T-	-p	-0.1961	2.4851	1.5109	318.2	207.0	89.4	17N	176W
-2221	May 23	05:16:28	51949	4709	-52203	-5	T-	pp	-0.0563	2.7887	1.7213	374.1	235.8	105.9	15S	135E
-2221	Nov 16	17:36:22	51936	4707	-52197	0	T	p-	0.4699	1.9872	1.0043	309.0	188.3	9.8	14N	50W
-2220	May 11	07:45:33	51924	4705	-52191	5	P	t-	-0.8172	1.3761	0.3414	306.4	133.4	-	12S	98E
-2220	Nov 05	06:00:15	51911	4703	-52185	10	N	a-	1.1910	0.6882	-0.3427	223.8	-	-	11N	124E
-2219	Apr 01	08:54:43	51901	4701	-52180	-23	N	-a	1.0399	0.9303	-0.0308	240.6	-	-	4N	86E
-2219	Apr 30	17:05:04	51899	4700	-52179	15	Nb	a-	-1.5242	0.0516	-0.9290	63.5	-	-	9S	42W
-2219	Sep 25	17:10:49	51888	4699	-52174	-18	N	-t	-1.0532	0.9749	-0.1230	281.8	-	-	7S	41W
-2218	Mar 22	01:34:14	51876	4696	-52168	-13	T	-p	0.2972	2.2849	1.3401	311.5	202.4	78.2	8N	164W
-2218	Sep 14	16:31:51	51863	4694	-52162	-8	T	-p	-0.3608	2.2401	1.1525	363.6	217.4	61.1	11S	31W
-2217	Mar 11	17:45:14	51851	4692	-52156	-3	T	a-	-0.4395	2.0378	1.0652	314.9	195.0	38.2	11N	46W
-2217	Sep 03	20:38:31	51838	4689	-52150	2	T	a-	0.3611	2.2129	1.1782	340.9	209.2	63.1	14S	93W
-2216	Feb 29	04:57:03	51826	4687	-52144	7	N	t-	-1.2341	0.6084	-0.4209	216.8	-	-	14N	146E
-2216	Jul 24	23:13:02	51816	4685	-52139	-26	Ne	-a	-1.5420	0.0057	-0.9486	20.2	-	-	25S	133W
-2216	Aug 23	08:09:41	51813	4685	-52138	12	N	a-	1.0458	0.9284	-0.0502	241.6	-	-	17S	94E
-2215	Jan 18	15:29:04	51803	4683	-52133	-21	P	-t	0.9228	1.2128	0.1178	307.3	83.6	-	24N	13W
-2215	Jul 14	16:02:12	51791	4681	-52127	-16	P	-a	-0.8485	1.2782	0.3236	268.0	119.3	-	25S	26W
-2214	Jan 07	15:55:57	51778	4679	-52121	-11	T+	pp	0.2072	2.5143	1.4419	363.1	225.5	92.2	24N	21W
-2214	Jul 04	06:20:57	51766	4676	-52115	-6	T-	pp	-0.1241	2.6276	1.6330	337.6	219.0	98.4	24S	118E
-2214	Dec 27	22:37:50	51753	4674	-52109	-1	P	a-	-0.5038	1.9431	0.9242	323.1	190.6	-	23N	123W
-2213	Jun 23	14:16:00	51741	4672	-52103	4	P	t-	0.6654	1.6604	0.6140	328.8	172.6	-	22S	1W
-2213	Nov 18	01:07:14	51730	4670	-52098	-29	N	-a	1.5189	0.0570	-0.9150	63.7	-	-	16N	163W
-2213	Dec 17	11:48:59	51728	4670	-52097	9	N	a-	-1.1529	0.7308	-0.2457	215.9	-	-	21N	38E
-2212	May 13	01:08:20	51718	4668	-52092	-24	N	-t	-1.3985	0.3235	-0.7389	171.1	-	-	14S	164W
-2212	Jun 11	15:53:27	51716	4667	-52091	14	N	t-	1.4401	0.2512	-0.8193	152.9	-	-	19S	26W
-2212	Nov 06	16:14:55	51705	4665	-52086	-19	P	-a	0.8990	1.2052	0.2115	268.3	99.2	-	11N	30W
-2211	May 02	05:14:26	51693	4663	-52080	-14	P	-t	-0.5924	1.7811	0.7611	326.0	183.6	-	9S	136E
-2211	Oct 27	02:57:51	51681	4661	-52074	-9	T+	-p	0.2360	2.4491	1.4013	348.3	217.9	87.2	7N	169E
-2210	Apr 21	16:29:45	51668	4659	-52068	-4	T+	p-	0.1993	2.4759	1.5084	326.0	212.6	91.8	4S	32W
-2210	Oct 16	06:26:11	51656	4656	-52062	1	P	t-	-0.4675	2.0485	0.9526	358.1	205.6	-	1N	118E
-2209	Apr 11	08:46:51	51643	4654	-52056	6	P	a-	0.9258	1.1299	0.1883	253.7	92.2	-	0N	85E
-2209	Oct 05	05:32:03	51631	4652	-52050	11	N	t-	-1.1452	0.8069	-0.2924	260.8	-	-	4S	132E
-2208	Mar 01	16:53:02	51620	4650	-52045	-22	P	-a	-0.9117	1.1796	0.1906	271.0	96.3	-	13N	34W
-2208	Aug 24	18:11:18	51608	4648	-52039	-17	N	-a	1.0488	0.9412	-0.0738	253.9	-	-	16S	57W

-2207 Feb 19	01:58:11	51596	4646	-52033	-12	T-	-p	-0.1881	2.5369	1.4890	357.2	224.9	94.8	17N	170W
-2207 Aug 14	07:28:23	51583	4643	-52027	-7	T	-p	0.2977	2.2944	1.3287	316.5	203.6	77.6	20S	103E
-2206 Feb 08	03:55:07	51571	4641	-52021	-2	P	t-	0.5527	1.8876	0.8009	352.9	195.4	-	21N	161E
-2206 Aug 03	23:57:28	51558	4639	-52015	3	T	p-	-0.4085	2.0859	1.1306	307.8	194.1	51.9	23S	144W
-2205 Jan 28	03:56:37	51546	4637	-52009	8	N	t-	1.2495	0.6038	-0.4724	226.3	-	-	24N	160E
-2205 Jun 25	04:47:30	51535	4635	-52004	-25	Ne	-a	1.4983	0.1131	-0.8954	96.2	-	-	21S	141E
-2205 Jul 24	14:59:01	51533	4634	-52003	13	N	a-	-1.1594	0.7246	-0.2633	222.5	-	-	25S	11W
-2205 Dec 18	20:34:34	51523	4632	-51998	-20	P	-a	-0.8967	1.2153	0.2103	273.8	100.4	-	21N	94W
-2204 Jun 13	10:43:50	51511	4630	-51992	-15	P	-t	0.7904	1.4362	0.3797	318.5	142.4	-	20S	51E
-2204 Dec 07	10:53:56	51498	4628	-51986	-10	T-	-p	-0.1970	2.4825	1.5103	317.7	206.8	89.3	20N	50E
-2203 Jun 02	11:33:29	51486	4626	-51980	-5	T+	pp	0.0324	2.8326	1.7651	374.0	235.9	106.4	18S	38E
-2203 Nov 27	02:26:42	51473	4623	-51974	0	T	p-	0.4713	1.9851	1.0011	309.5	188.4	4.9	18N	176E
-2202 May 22	14:21:42	51461	4621	-51968	5	P	t-	-0.7313	1.5321	0.5005	316.2	157.1	-	16S	4W
-2202 Nov 16	14:34:05	51448	4619	-51962	10	N	a-	1.1954	0.6817	-0.3523	223.8	-	-	15N	6W
-2201 Apr 12	16:16:49	51438	4617	-51957	-23	N	-a	1.1063	0.8064	-0.1506	226.2	-	-	0S	28W
-2201 May 12	00:09:46	51436	4617	-51956	15	N	a-	-1.4439	0.1971	-0.7798	121.9	-	-	13S	151W
-2201 Oct 07	00:59:26	51426	4615	-51951	-18	N	-t	-1.0678	0.9498	-0.1516	279.4	-	-	3S	160W
-2200 Apr 01	09:09:45	51413	4613	-51945	-13	T	-p	0.3622	2.1648	1.2216	308.5	198.0	65.8	3N	79E
-2200 Sep 25	00:17:08	51401	4610	-51939	-8	T	-p	-0.3801	2.2052	1.1166	361.9	215.1	53.9	7S	150W

# 22ND CENTURY BCE

**In the 22nd century BCE the total number of lunar eclipses was 227 lunar eclipses: 82 penumbral lunar eclipses, 62 partial lunar eclipses, 83 total lunar eclipses (28 central total lunar eclipses, 55 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
	ECLIPSE														
-2199 Mar 22	01:16:32	51388	4608	-51933	-3	T	p-	-0.3799	2.1473	1.1743	319.3	201.1	60.5	7N	162W



-2199 Sep 14	04:40:04	51376	4606	-51927	2	T	a-	0.3373	2.2565	1.2220	341.0	210.5	69.1	11S	145E
-2198 Mar 11	12:09:45	51364	4604	-51921	7	N	t-	-1.1801	0.7077	-0.3220	232.4	-	-	10N	35E
-2198 Sep 03	16:23:33	51351	4601	-51915	12	P	a-	1.0157	0.9840	0.0046	246.8	15.0	-	14S	31W
-2197 Jan 29	22:49:17	51341	4600	-51910	-21	P	-t	0.9582	1.1458	0.0545	300.6	57.4	-	23N	124W
-2197 Jul 25	23:47:55	51329	4597	-51904	-16	P	-a	-0.9022	1.1820	0.2229	261.2	100.6	-	24S	143W
-2196 Jan 18	23:39:09	51316	4595	-51898	-11	T+	pp	0.2320	2.4658	1.3994	360.7	223.8	89.1	24N	138W
-2196 Jul 14	13:40:24	51304	4593	-51892	-6	T-	-p	-0.1861	2.5169	1.5162	338.0	217.5	93.7	24S	7E
-2195 Jan 07	06:55:42	51291	4591	-51886	-1	P	a-	-0.4884	1.9684	0.9552	322.7	192.1	-	23N	112E
-2195 Jul 03	20:59:23	51279	4588	-51880	4	P	t-	0.5935	1.7951	0.7434	337.6	186.3	-	23S	103W
-2195 Nov 28	10:01:20	51269	4587	-51875	-29	N	-a	1.5176	0.0590	-0.9124	64.8	-	-	19N	61E
-2195 Dec 27	20:29:40	51267	4586	-51874	9	N	a-	-1.1438	0.7457	-0.2274	217.3	-	-	22N	93W
-2194 May 24	07:26:27	51256	4584	-51869	-24	N	-t	-1.4821	0.1693	-0.8917	125.3	-	-	17S	99E
-2194 Jun 22	22:16:01	51254	4584	-51868	14	N	t-	1.3596	0.3999	-0.6726	190.4	-	-	21S	123W
-2194 Nov 18	01:03:16	51244	4582	-51863	-19	P	-a	0.8982	1.2079	0.2119	269.3	99.5	-	15N	164W
-2193 May 13	11:58:07	51231	4580	-51857	-14	P	-t	-0.6719	1.6333	0.6172	316.5	168.7	-	13S	32E
-2193 Nov 07	11:24:50	51219	4578	-51851	-9	T+	-p	0.2351	2.4526	1.4011	349.7	218.4	87.3	11N	40E
-2192 May 01	23:42:54	51207	4575	-51845	-4	T+	p-	0.1242	2.6118	1.6479	326.3	214.7	97.5	8S	143W
-2192 Oct 26	14:27:26	51194	4573	-51839	1	P	t-	-0.4638	2.0569	0.9579	359.3	206.2	-	6N	5W
-2191 Apr 21	16:14:26	51182	4571	-51833	6	P	a-	0.8562	1.2567	0.3167	263.6	117.3	-	4S	30W
-2191 Oct 15	13:27:00	51169	4569	-51827	11	N	t-	-1.1355	0.8251	-0.2751	262.9	-	-	1N	11E
-2190 Mar 13	00:25:08	51159	4567	-51822	-22	P	-a	-0.9695	1.0737	0.0843	262.5	65.2	-	10N	149W
-2190 Sep 05	02:11:50	51147	4565	-51816	-17	N	-a	1.0725	0.8977	-0.1173	248.3	-	-	13S	179W
-2189 Mar 02	09:11:02	51134	4562	-51810	-12	T-	-p	-0.2427	2.4368	1.3890	356.5	222.8	88.3	14N	80E
-2189 Aug 25	15:38:27	51122	4560	-51804	-7	T	-p	0.3302	2.2354	1.2683	314.7	201.0	71.4	17S	21W
-2188 Feb 19	10:57:37	51110	4558	-51798	-2	P	t-	0.5026	1.9781	0.8943	356.9	203.1	-	18N	54E
-2188 Aug 14	08:00:29	51097	4556	-51792	3	T	p-	-0.3688	2.1608	1.2015	310.6	197.5	63.1	20S	94E
-2187 Feb 07	11:18:11	51085	4553	-51786	8	N	t-	1.2084	0.6761	-0.3941	236.9	-	-	21N	48E
-2187 Aug 03	22:37:37	51072	4551	-51780	13	N	a-	-1.1149	0.8093	-0.1848	234.2	-	-	23S	126W
-2187 Dec 29	05:03:37	51062	4549	-51775	-20	P	-a	-0.9037	1.1999	0.1999	271.5	97.8	-	23N	138E
-2186 Jun 24	17:15:38	51050	4547	-51769	-15	P	-t	0.8710	1.2904	0.2296	307.9	113.5	-	22S	49W
-2186 Dec 18	19:40:04	51037	4545	-51763	-10	T-	-p	-0.2023	2.4715	1.5017	317.2	206.6	88.9	22N	82W
-2185 Jun 13	17:53:27	51025	4543	-51757	-5	T+	pp	0.1188	2.6743	1.6062	372.8	234.1	102.7	21S	59W
-2185 Dec 08	11:13:58	51013	4540	-51751	0	T	p-	0.4708	1.9864	1.0017	310.2	188.8	6.2	21N	43E
-2184 Jun 01	21:01:25	51000	4538	-51745	5	P	t-	-0.6469	1.6857	0.6567	324.3	174.9	-	19S	106W
-2184 Nov 26	23:06:09	50988	4536	-51739	10	N	a-	1.1994	0.6758	-0.3607	223.7	-	-	19N	136W
-2183 Apr 22	23:36:34	50978	4534	-51734	-23	N	-a	1.1751	0.6784	-0.2751	209.5	-	-	4S	141W
-2183 May 22	07:16:23	50976	4534	-51733	15	N	a-	-1.3640	0.3421	-0.6318	157.8	-	-	17S	100E
-2183 Oct 17	08:54:15	50965	4532	-51728	-18	N	-t	-1.0771	0.9342	-0.1700	278.0	-	-	2N	78E
-2182 Apr 12	16:39:04	50953	4530	-51722	-13	T	-a	0.4323	2.0355	1.0935	304.8	192.1	44.5	1S	36W
-2182 Oct 06	08:11:25	50941	4527	-51716	-8	T	-p	-0.3926	2.1825	1.0934	360.6	213.4	48.5	2S	89E

-2181 Apr 02	08:39:51	50928	4525	-51710	-3	T	p-	-0.3145	2.2676	1.2938	323.6	206.7	75.8	3N	84E
-2181 Sep 25	12:51:10	50916	4523	-51704	2	T	p-	0.3205	2.2871	1.2531	340.7	211.2	72.8	6S	19E
-2180 Mar 21	19:13:38	50903	4521	-51698	7	N	t-	-1.1198	0.8187	-0.2117	248.1	-	-	6N	73W
-2180 Sep 14	00:46:23	50891	4519	-51692	12	P	a-	0.9926	1.0267	0.0466	250.4	47.4	-	10S	159W
-2179 Feb 09	06:01:44	50881	4517	-51687	-21	Nx	-t	0.9999	1.0674	-0.0200	292.2	-	-	21N	127E
-2179 Aug 05	07:39:47	50868	4514	-51681	-16	P	-a	-0.9504	1.0959	0.1321	254.6	78.6	-	23S	98E
-2178 Jan 29	07:16:27	50856	4512	-51675	-11	T+	pp	0.2625	2.4067	1.3466	357.9	221.6	84.7	22N	107E
-2178 Jul 25	21:05:06	50844	4510	-51669	-6	T-	-p	-0.2429	2.4159	1.4088	338.1	215.3	87.2	24S	105W
-2177 Jan 18	15:05:42	50831	4508	-51663	-1	P	a-	-0.4658	2.0068	0.9998	322.6	194.4	-	23N	11W
-2177 Jul 15	03:48:41	50819	4506	-51657	4	P	t-	0.5270	1.9198	0.8625	345.1	197.0	-	23S	153E
-2177 Dec 09	18:51:31	50809	4504	-51652	-29	N	-a	1.5199	0.0542	-0.9160	62.1	-	-	22N	72W
-2176 Jan 08	05:02:48	50807	4503	-51651	9	N	a-	-1.1283	0.7722	-0.1971	220.1	-	-	23N	138E
-2176 Jun 03	13:49:01	50796	4502	-51646	-24	Ne	-t	-1.5619	0.0224	-1.0377	46.1	-	-	20S	1E
-2176 Jul 03	04:46:03	50794	4501	-51645	14	N	t-	1.2846	0.5387	-0.5360	218.2	-	-	22S	138E
-2176 Nov 28	09:48:10	50784	4499	-51640	-19	P	-a	0.8999	1.2056	0.2079	269.8	98.9	-	19N	63E
-2175 May 23	18:45:22	50772	4497	-51634	-14	P	-t	-0.7494	1.4893	0.4766	306.1	151.1	-	17S	72W
-2175 Nov 17	19:50:45	50759	4495	-51628	-9	T+	-p	0.2343	2.4556	1.4011	351.2	219.0	87.5	15N	88W
-2174 May 13	06:54:35	50747	4493	-51622	-4	T+	pp	0.0471	2.7518	1.7910	326.0	215.5	100.3	12S	106E
-2174 Nov 06	22:31:29	50735	4490	-51616	1	P	t-	-0.4627	2.0599	0.9588	360.1	206.6	-	10N	128W
-2173 May 02	23:37:39	50722	4488	-51610	6	P	a-	0.7828	1.3910	0.4518	273.0	137.4	-	8S	144W
-2173 Oct 26	21:27:53	50710	4486	-51604	11	N	t-	-1.1301	0.8350	-0.2651	263.9	-	-	5N	112W
-2172 Mar 23	07:46:59	50700	4484	-51599	-22	N	-a	-1.0349	0.9542	-0.0360	251.5	-	-	6N	97E
-2172 Apr 21	16:20:31	50698	4484	-51598	16	Nb	a-	1.5357	0.0207	-0.9405	39.3	-	-	3S	33W
-2172 Sep 15	10:23:17	50687	4482	-51593	-17	N	-a	1.0884	0.8684	-0.1463	244.1	-	-	9S	56E
-2171 Mar 12	16:13:44	50675	4480	-51587	-12	T	-t	-0.3045	2.3233	1.2756	355.0	219.4	77.8	10N	28W
-2171 Sep 04	23:56:36	50663	4478	-51581	-7	T	-p	0.3564	2.1883	1.2197	313.1	198.7	65.6	14S	147W
-2170 Mar 01	17:51:27	50651	4475	-51575	-2	T	t-	0.4455	2.0813	1.0006	361.0	210.8	4.1	15N	52W
-2170 Aug 25	16:10:37	50638	4473	-51569	3	T	p-	-0.3356	2.2239	1.2602	313.0	200.1	70.3	18S	31W
-2169 Feb 18	18:31:10	50626	4471	-51563	8	N	t-	1.1597	0.7625	-0.3017	248.5	-	-	19N	62W
-2169 Aug 15	06:23:09	50613	4469	-51557	13	N	a-	-1.0770	0.8821	-0.1185	243.8	-	-	21S	116E
-2168 Jan 09	13:27:19	50603	4467	-51552	-20	P	-a	-0.9155	1.1755	0.1809	268.4	93.0	-	23N	11E
-2168 Jul 04	23:52:14	50591	4465	-51546	-15	P	-t	0.9469	1.1535	0.0881	296.5	71.9	-	23S	149W
-2168 Dec 29	04:21:20	50579	4462	-51540	-10	T-	-p	-0.2117	2.4531	1.4858	316.5	206.2	88.1	23N	147E
-2167 Jun 24	00:19:38	50566	4460	-51534	-5	T+	pp	0.2004	2.5251	1.4562	370.5	230.7	95.2	23S	157W
-2167 Dec 18	19:56:52	50554	4458	-51528	0	T	p-	0.4672	1.9931	1.0081	311.1	189.6	13.5	23N	89W
-2166 Jun 13	03:45:31	50542	4456	-51522	5	P	t-	-0.5649	1.8350	0.8080	330.8	188.5	-	21S	151E
-2166 Dec 08	07:34:15	50529	4454	-51516	10	N	a-	1.2010	0.6737	-0.3648	224.2	-	-	21N	96E
-2165 May 04	06:54:59	50519	4452	-51511	-23	N	-a	1.2453	0.5482	-0.4025	190.3	-	-	8S	106E
-2165 Jun 02	14:26:23	50517	4451	-51510	15	N	a-	-1.2860	0.4841	-0.4874	184.5	-	-	20S	9W
-2165 Oct 28	16:51:57	50507	4450	-51505	-18	N	-t	-1.0836	0.9234	-0.1828	277.0	-	-	6N	44W

-2164 Apr 23	00:05:18	50494	4447	-51499	-13	P	-a	0.5047	1.9025	0.9609	300.2	184.7	-	5S	151W
-2164 Oct 16	16:12:32	50482	4445	-51493	-8	T	-p	-0.3997	2.1695	1.0806	359.4	212.3	45.2	2N	34W
-2163 Apr 12	15:56:55	50470	4443	-51487	-3	T-	p-	-0.2447	2.3964	1.4212	327.5	211.6	86.9	2S	28W
-2163 Oct 05	21:09:55	50458	4441	-51481	2	T	p-	0.3093	2.3071	1.2740	340.0	211.4	75.0	2S	108W
-2162 Apr 02	02:08:06	50445	4439	-51475	7	N	t-	-1.0527	0.9424	-0.0891	263.7	-	-	2N	180W
-2162 Sep 25	09:17:54	50433	4436	-51469	12	P	a-	0.9762	1.0570	0.0764	252.8	60.3	-	6S	70E
-2161 Feb 20	13:02:01	50423	4435	-51464	-21	N	-t	1.0513	0.9710	-0.1123	281.0	-	-	18N	20E
-2161 Aug 16	15:40:14	50410	4432	-51458	-16	P	-a	-0.9911	1.0237	0.0549	248.8	51.3	-	21S	24W
-2160 Feb 09	14:44:21	50398	4430	-51452	-11	T	-p	0.3015	2.3318	1.2781	354.5	218.5	77.7	20N	6W
-2160 Aug 05	04:36:23	50386	4428	-51446	-6	T	-p	-0.2931	2.3270	1.3133	338.1	212.8	79.2	22S	141E
-2159 Jan 28	23:09:02	50374	4426	-51440	-1	T	a-	-0.4369	2.0567	1.0559	322.9	197.2	35.8	22N	133W
-2159 Jul 25	10:43:57	50361	4424	-51434	4	P	t-	0.4660	2.0347	0.9716	351.3	205.4	-	23S	48E
-2159 Dec 20	03:38:42	50351	4422	-51429	-29	N	-a	1.5246	0.0449	-0.9239	56.6	-	-	24N	155E
-2158 Jan 18	13:29:57	50349	4421	-51428	9	N	a-	-1.1081	0.8073	-0.1580	223.8	-	-	22N	10E
-2158 Jul 14	11:21:19	50337	4419	-51422	14	N	t-	1.2131	0.6712	-0.4061	240.5	-	-	23S	38E
-2158 Dec 09	18:31:10	50326	4417	-51417	-19	P	-a	0.9026	1.2013	0.2024	270.2	97.9	-	22N	69W
-2157 Jun 04	01:35:29	50314	4415	-51411	-14	P	-t	-0.8254	1.3485	0.3385	294.8	129.6	-	20S	177W
-2157 Nov 29	04:14:32	50302	4413	-51405	-9	T+	-p	0.2344	2.4565	1.3997	352.4	219.6	87.6	18N	144E
-2156 May 23	14:09:02	50290	4411	-51399	-4	T-	pp	-0.0285	2.7848	1.8263	325.0	215.2	100.5	16S	5W
-2156 Nov 17	06:35:51	50277	4409	-51393	1	P	t-	-0.4621	2.0618	0.9594	360.8	206.9	-	14N	109E
-2155 May 13	07:00:46	50265	4406	-51387	6	P	a-	0.7093	1.5257	0.5867	281.4	153.4	-	12S	103E
-2155 Nov 06	05:31:25	50253	4404	-51381	11	N	t-	-1.1263	0.8415	-0.2579	264.3	-	-	9N	125E
-2154 Apr 03	15:02:21	50243	4402	-51376	-22	N	-a	-1.1044	0.8272	-0.1642	238.2	-	-	1N	14W
-2154 May 02	23:35:16	50241	4402	-51375	16	N	a-	1.4688	0.1443	-0.8188	103.0	-	-	7S	145W
-2154 Sep 26	18:42:49	50230	4400	-51370	-17	N	-a	1.0982	0.8502	-0.1641	241.3	-	-	5S	72W
-2153 Mar 23	23:06:10	50218	4398	-51364	-12	T	-t	-0.3736	2.1967	1.1487	352.6	214.3	59.9	6N	134W
-2153 Sep 16	08:23:51	50206	4396	-51358	-7	T	-p	0.3751	2.1547	1.1847	311.8	196.9	60.7	10S	84E
-2152 Mar 12	00:35:42	50193	4394	-51352	-2	T	t-	0.3809	2.1984	1.1206	364.9	218.0	55.5	11N	155W
-2152 Sep 05	00:28:44	50181	4391	-51346	3	T	p-	-0.3095	2.2738	1.3059	314.9	202.0	75.1	14S	157W
-2151 Mar 01	01:36:19	50169	4389	-51340	8	N	t-	1.1039	0.8618	-0.1963	260.5	-	-	15N	170W
-2151 Aug 25	14:16:45	50157	4387	-51334	13	N	a-	-1.0466	0.9411	-0.0659	251.4	-	-	18S	4W
-2150 Jan 19	21:43:11	50147	4385	-51329	-20	P	-a	-0.9344	1.1380	0.1490	264.1	84.6	-	22N	113W
-2150 Jul 16	06:34:18	50134	4383	-51323	-15	Nx	-t	1.0174	1.0267	-0.0435	284.4	-	-	23S	109E
-2149 Jan 09	12:55:30	50122	4381	-51317	-10	T-	-p	-0.2270	2.4235	1.4592	315.7	205.5	86.5	24N	17E
-2149 Jul 05	06:52:43	50110	4379	-51311	-5	T	pp	0.2765	2.3860	1.3160	367.4	225.9	83.6	23S	104E
-2149 Dec 30	04:32:51	50097	4376	-51305	0	T	p-	0.4586	2.0088	1.0240	312.3	190.9	23.2	24N	142E
-2148 Jun 23	10:36:56	50085	4374	-51299	5	P	t-	-0.4879	1.9755	0.9501	335.7	198.6	-	23S	47E
-2148 Dec 18	15:57:51	50073	4372	-51293	10	N	h-	1.2001	0.6760	-0.3638	225.3	-	-	24N	31W
-2147 May 14	14:12:36	50063	4370	-51288	-23	N	-a	1.3165	0.4164	-0.5320	167.6	-	-	12S	6W
-2147 Jun 12	21:39:43	50061	4370	-51287	15	N	a-	-1.2096	0.6233	-0.3465	205.8	-	-	22S	120W

-2147	Nov 08	00:53:16	50050	4368	-51282	-18	N	-t	-1.0869	0.9180	-0.1894	276.6	-	-	10N	166W
-2146	May 04	07:27:51	50038	4366	-51276	-13	P	-a	0.5799	1.7646	0.8229	294.7	175.2	-	9S	96E
-2146	Oct 28	00:19:39	50026	4364	-51270	-8	T	-p	-0.4027	2.1634	1.0754	358.4	211.6	43.7	7N	158W
-2145	Apr 23	23:07:23	50014	4361	-51264	-3	T-	pp	-0.1701	2.5343	1.5572	330.9	215.5	94.9	6S	139W
-2145	Oct 17	05:36:11	50001	4359	-51258	2	T	p-	0.3033	2.3175	1.2857	339.1	211.2	76.0	3N	123E
-2144	Apr 12	08:56:06	49989	4357	-51252	7	P	t-	-0.9807	1.0751	0.0421	278.8	48.7	-	2S	75E
-2144	Oct 05	17:55:17	49977	4355	-51246	12	P	a-	0.9642	1.0793	0.0983	254.3	68.1	-	1S	61W
-2143	Mar 02	19:55:23	49967	4353	-51241	-21	N	-t	1.1083	0.8644	-0.2147	267.6	-	-	15N	85W
-2143	Aug 26	23:47:30	49955	4351	-51235	-16	N	-a	-1.0260	0.9623	-0.0117	243.5	-	-	18S	147W
-2142	Feb 19	22:05:00	49942	4349	-51229	-11	T	-p	0.3474	2.2443	1.1972	350.5	214.5	67.2	18N	118W
-2142	Aug 16	12:14:17	49930	4347	-51223	-6	T	-a	-0.3371	2.2499	1.2293	337.9	210.0	69.9	20S	25E
-2141	Feb 09	07:04:18	49918	4344	-51217	-1	T	a-	-0.4004	2.1205	1.1261	323.5	200.4	52.6	20N	107E
-2141	Aug 05	17:47:19	49906	4342	-51211	4	T	t-	0.4121	2.1366	1.0677	356.5	211.9	41.8	22S	59W
-2141	Dec 31	12:18:17	49895	4340	-51206	-29	N	-a	1.5358	0.0234	-0.9435	40.9	-	-	25N	25E
-2140	Jan 29	21:47:47	49893	4340	-51205	9	N	a-	-1.0799	0.8570	-0.1044	229.0	-	-	21N	115W
-2140	Jul 24	18:07:11	49881	4338	-51199	14	N	t-	1.1492	0.7896	-0.2902	257.8	-	-	22S	65W
-2140	Dec 20	03:08:15	49871	4336	-51194	-19	P	-a	0.9101	1.1880	0.1882	269.9	94.8	-	24N	161E
-2139	Jun 14	08:30:51	49859	4334	-51188	-14	P	-t	-0.8981	1.2140	0.2062	282.8	102.7	-	22S	77E
-2139	Dec 09	12:34:07	49847	4332	-51182	-9	T+	-p	0.2374	2.4519	1.3933	353.6	220.0	87.3	21N	18E
-2138	Jun 03	21:25:15	49834	4329	-51176	-4	T-	pp	-0.1036	2.6461	1.6893	323.4	213.6	98.1	19S	117W
-2138	Nov 28	14:38:13	49822	4327	-51170	1	P	t-	-0.4601	2.0656	0.9627	361.4	207.3	-	18N	13W
-2137	May 24	14:22:33	49810	4325	-51164	6	P	a-	0.6347	1.6629	0.7234	288.9	166.6	-	15S	10W
-2137	Nov 17	13:37:34	49798	4323	-51158	11	N	t-	-1.1239	0.8450	-0.2527	264.3	-	-	13N	1E
-2136	Apr 13	22:09:58	49787	4321	-51153	-22	N	-a	-1.1790	0.6912	-0.3020	221.6	-	-	3S	124W
-2136	May 13	06:46:50	49785	4321	-51152	16	N	a-	1.4000	0.2719	-0.6938	140.2	-	-	11S	104E
-2136	Oct 07	03:10:09	49775	4319	-51147	-17	N	-a	1.1026	0.8416	-0.1719	239.5	-	-	0S	159E
-2135	Apr 03	05:50:41	49763	4317	-51141	-12	T	-t	-0.4482	2.0601	1.0116	348.9	207.0	17.5	2N	122E
-2135	Sep 26	16:58:44	49751	4315	-51135	-7	T	-p	0.3878	2.1320	1.1606	310.9	195.5	56.9	5S	47W
-2134	Mar 23	07:11:20	49739	4312	-51129	-2	T	tp	0.3090	2.3287	1.2539	368.3	224.4	77.0	7N	103E
-2134	Sep 16	08:54:29	49726	4310	-51123	3	T	p-	-0.2902	2.3115	1.3393	316.6	203.3	78.2	10S	74E
-2133	Mar 12	08:34:33	49714	4308	-51117	8	N	t-	1.0412	0.9738	-0.0783	272.6	-	-	12N	83E
-2133	Sep 05	22:17:31	49702	4306	-51111	13	N	a-	-1.0227	0.9883	-0.0252	257.6	-	-	15S	126W
-2132	Jan 31	05:52:13	49692	4304	-51106	-20	P	-a	-0.9597	1.0887	0.1055	258.7	71.4	-	21N	123E
-2132	Jul 26	13:24:27	49680	4302	-51100	-15	N	-t	1.0805	0.9133	-0.1618	272.2	-	-	22S	6E
-2131	Jan 19	21:23:41	49667	4300	-51094	-10	T-	-p	-0.2474	2.3845	1.4232	314.7	204.6	84.3	23N	110W
-2131	Jul 15	13:33:18	49655	4298	-51088	-5	T	-t	0.3468	2.2576	1.1862	363.7	220.0	67.1	24S	2E
-2130	Jan 09	13:02:18	49643	4295	-51082	0	T	p-	0.4452	2.0333	1.0488	313.8	192.8	32.9	24N	14E
-2130	Jul 04	17:35:44	49631	4293	-51076	5	T	h-	-0.4161	2.1067	1.0825	339.3	206.1	44.7	24S	59W
-2130	Dec 30	00:13:00	49619	4291	-51070	10	N	h-	1.1933	0.6890	-0.3516	227.9	-	-	25N	156W
-2129	May 25	21:31:46	49608	4289	-51065	-23	N	-a	1.3869	0.2865	-0.6605	140.4	-	-	15S	118W

-2129 Jun 24	04:59:24	49606	4289	-51064	15	N	a-	-1.1376	0.7549	-0.2137	222.8	-	-	24S	129E
-2129 Nov 19	08:54:01	49596	4287	-51059	-18	N	-t	-1.0903	0.9117	-0.1959	275.9	-	-	14N	72E
-2128 May 14	14:49:46	49584	4285	-51053	-13	P	-a	0.6554	1.6264	0.6838	288.3	163.6	-	13S	18W
-2128 Nov 07	08:28:48	49572	4283	-51047	-8	T	-p	-0.4048	2.1589	1.0725	357.3	211.0	42.8	11N	78E
-2127 May 04	06:14:22	49560	4281	-51041	-3	T-	pp	-0.0934	2.6763	1.6967	333.7	218.3	99.9	10S	112E
-2127 Oct 27	14:07:26	49548	4278	-51035	2	T	p-	0.3006	2.3214	1.2915	338.0	210.8	76.4	7N	7W
-2126 Apr 23	15:35:40	49535	4276	-51029	7	P	t-	-0.9027	1.2193	0.1844	293.4	100.2	-	6S	28W
-2126 Oct 17	02:39:39	49523	4274	-51023	12	P	a-	0.9577	1.0912	0.1103	255.0	71.9	-	3N	165E
-2125 Mar 14	02:38:15	49513	4272	-51018	-21	N	-t	1.1734	0.7429	-0.3322	250.7	-	-	11N	171E
-2125 Sep 07	08:03:27	49501	4270	-51012	-16	N	-a	-1.0533	0.9147	-0.0643	239.4	-	-	14S	87E
-2124 Mar 02	05:17:18	49489	4268	-51006	-11	T	-t	0.4009	2.1428	1.1023	345.6	209.2	49.8	14N	132E
-2124 Aug 26	20:00:38	49476	4266	-51000	-6	T	-a	-0.3730	2.1873	1.1600	337.9	207.5	59.9	17S	93W
-2123 Feb 19	14:52:55	49464	4264	-50994	-1	T	a-	-0.3575	2.1960	1.2078	324.2	203.8	65.6	17N	12W
-2123 Aug 16	00:57:33	49452	4261	-50988	4	T	p-	0.3642	2.2274	1.1526	360.8	216.9	61.0	19S	168W
-2122 Feb 09	05:59:11	49440	4259	-50982	9	N	a-	-1.0464	0.9165	-0.0409	234.9	-	-	19N	121E
-2122 Aug 05	01:01:10	49428	4257	-50976	14	N	t-	1.0912	0.8975	-0.1850	271.9	-	-	21S	169W
-2122 Dec 31	11:39:11	49417	4255	-50971	-19	P	-a	0.9220	1.1663	0.1662	268.8	89.6	-	25N	32E
-2121 Jun 25	15:32:26	49405	4253	-50965	-14	P	-t	-0.9665	1.0876	0.0816	270.3	65.5	-	24S	30W
-2121 Dec 20	20:48:26	49393	4251	-50959	-9	T+	-p	0.2441	2.4401	1.3804	354.5	220.2	86.6	23N	106W
-2120 Jun 14	04:46:19	49381	4249	-50953	-4	T-	pp	-0.1750	2.5145	1.5587	321.2	211.1	93.4	21S	131E
-2120 Dec 08	22:36:52	49369	4247	-50947	1	P	t-	-0.4553	2.0742	0.9717	362.0	208.1	-	20N	134W
-2119 Jun 03	21:46:57	49357	4245	-50941	6	P	a-	0.5622	1.7965	0.8558	295.5	177.3	-	18S	124W
-2119 Nov 27	21:42:53	49345	4242	-50935	11	N	t-	-1.1205	0.8501	-0.2451	264.3	-	-	17N	122W
-2118 Apr 25	05:11:42	49334	4241	-50930	-22	N	-a	-1.2572	0.5489	-0.4466	201.1	-	-	7S	127E
-2118 May 24	13:56:41	49332	4240	-50929	16	N	a-	1.3304	0.4012	-0.5678	168.9	-	-	15S	6W
-2118 Oct 18	11:43:42	49322	4238	-50924	-17	N	-a	1.1028	0.8407	-0.1716	238.6	-	-	4N	28E
-2117 Apr 14	12:27:48	49310	4236	-50918	-12	P	-t	-0.5280	1.9142	0.8647	344.0	197.2	-	2S	19E
-2117 Oct 08	01:40:14	49298	4234	-50912	-7	T	-p	0.3954	2.1185	1.1462	310.2	194.6	54.5	1S	180E
-2116 Apr 02	13:40:16	49286	4232	-50906	-2	T+	pp	0.2316	2.4696	1.3973	371.2	229.7	91.2	3N	3E
-2116 Sep 26	17:27:46	49274	4230	-50900	3	T	p-	-0.2773	2.3371	1.3610	317.9	204.3	80.1	6S	57W
-2115 Mar 22	15:26:18	49261	4228	-50894	8	P	t-	0.9723	1.0974	0.0510	284.4	54.0	-	8N	23W
-2115 Sep 16	06:25:43	49249	4226	-50888	13	P	a-	-1.0056	1.0227	0.0031	262.3	12.8	-	11S	110E
-2114 Feb 10	13:53:12	49239	4224	-50883	-20	P	-a	-0.9920	1.0264	0.0489	251.9	48.9	-	19N	2E
-2114 Aug 06	20:22:43	49227	4222	-50877	-15	N	-t	1.1362	0.8138	-0.2664	260.2	-	-	21S	100W
-2113 Jan 31	05:41:53	49215	4219	-50871	-10	T	-p	-0.2761	2.3303	1.3721	313.4	203.1	80.6	22N	124E
-2113 Jul 26	20:23:39	49203	4217	-50865	-5	T	-t	0.4094	2.1436	1.0706	359.7	213.5	42.9	23S	101W
-2112 Jan 20	21:23:08	49191	4215	-50859	0	T	p-	0.4255	2.0691	1.0851	315.8	195.2	43.1	24N	112W
-2112 Jul 15	00:43:03	49178	4213	-50853	5	T	a-	-0.3502	2.2273	1.2039	341.7	211.5	67.3	24S	167W
-2111 Jan 09	08:20:57	49166	4211	-50847	10	N	h-	1.1816	0.7107	-0.3304	231.7	-	-	25N	82E
-2111 Jun 05	04:52:51	49156	4209	-50842	-23	N	-a	1.4559	0.1595	-0.7868	105.8	-	-	18S	129E

-2111 Jul 04	12:24:51	49154	4209	-50841	15	N	a-	-1.0696	0.8793	-0.0887	236.7	-	-	25S	17E
-2111 Nov 29	16:54:41	49144	4207	-50836	-18	N	-t	-1.0938	0.9050	-0.2020	275.1	-	-	17N	50W
-2110 May 25	22:09:33	49132	4205	-50830	-13	P	-a	0.7325	1.4859	0.5417	280.8	149.1	-	16S	130W
-2110 Nov 18	16:41:15	49120	4203	-50824	-8	T	-p	-0.4047	2.1577	1.0738	356.2	210.6	43.1	15N	47W
-2109 May 15	13:18:06	49108	4200	-50818	-3	T-	pp	-0.0149	2.8219	1.8390	335.7	219.9	102.0	13S	3E
-2109 Nov 07	22:42:03	49096	4198	-50812	2	T	p-	0.3000	2.3213	1.2939	336.8	210.3	76.5	11N	138W
-2108 May 03	22:12:17	49083	4196	-50806	7	P	t-	-0.8229	1.3670	0.3296	306.7	131.6	-	10S	130W
-2108 Oct 27	11:28:02	49071	4194	-50800	12	P	a-	0.9544	1.0970	0.1165	255.1	73.7	-	8N	30E
-2107 Mar 24	09:15:56	49061	4192	-50795	-21	N	-t	1.2427	0.6136	-0.4574	230.3	-	-	7N	69E
-2107 Sep 17	16:25:29	49049	4190	-50789	-16	N	-a	-1.0754	0.8768	-0.1073	236.1	-	-	10S	41W
-2106 Mar 13	12:24:10	49037	4188	-50783	-11	P	-t	0.4599	2.0312	0.9972	340.0	202.4	-	10N	23E
-2106 Sep 07	03:54:09	49025	4186	-50777	-6	T	-a	-0.4024	2.1367	1.1028	338.0	205.2	49.0	14S	147E
-2105 Mar 02	22:33:15	49013	4184	-50771	-1	T	p-	-0.3066	2.2864	1.3042	325.0	207.1	76.7	14N	129W
-2105 Aug 27	08:17:25	49000	4181	-50765	4	T	p-	0.3246	2.3030	1.2226	364.3	220.6	72.0	16S	81E
-2104 Feb 20	14:01:49	48988	4179	-50759	9	P	a-	-1.0052	0.9903	0.0365	241.9	41.5	-	16N	2W
-2104 Aug 15	08:05:47	48976	4177	-50753	14	N	t-	1.0409	0.9910	-0.0941	282.9	-	-	19S	83E
-2103 Jan 10	20:01:31	48966	4175	-50748	-19	P	-a	0.9406	1.1322	0.1319	266.6	80.5	-	25N	94W
-2103 Jul 05	22:42:13	48954	4173	-50742	-14	N	-h	-1.0294	0.9717	-0.0331	257.7	-	-	25S	138W
-2103 Dec 31	04:54:43	48942	4171	-50736	-9	T+	-p	0.2567	2.4174	1.3572	355.1	220.1	84.9	24N	132E
-2102 Jun 25	12:11:31	48930	4169	-50730	-4	T-	-p	-0.2437	2.3883	1.4329	318.4	207.7	86.2	23S	19E
-2102 Dec 20	06:30:31	48918	4167	-50724	1	P	t-	-0.4465	2.0898	0.9884	362.8	209.4	-	22N	106E
-2101 Jun 15	05:13:25	48906	4165	-50718	6	P	a-	0.4915	1.9272	0.9845	301.1	186.0	-	21S	123E
-2101 Dec 09	05:46:07	48893	4163	-50712	11	N	t-	-1.1145	0.8594	-0.2325	264.8	-	-	20N	116E
-2100 May 05	12:09:07	48883	4161	-50707	-22	N	-a	-1.3378	0.4026	-0.5959	175.4	-	-	11S	20E
-2100 Jun 03	21:07:01	48881	4160	-50706	16	N	a-	1.2617	0.5294	-0.4435	192.4	-	-	18S	116W
-2100 Oct 28	20:23:17	48871	4159	-50701	-17	N	-a	1.0993	0.8463	-0.1642	238.5	-	-	9N	104W

## 21ST CENTURY BCE

**In the 21st century BCE the total number of lunar eclipses was 230 lunar eclipses: 77 penumbral lunar eclipses, 68 partial lunar eclipses, 85 total lunar eclipses (32 central total lunar eclipses, 53 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-2099 Apr 24	18:58:39	48859	4156	-50695	-12	P	-t	-0.6119	1.7609	0.7101	337.4	184.0	-	7S	81W
-2099 Oct 18	10:27:36	48847	4154	-50689	-7	T	-p	0.3985	2.1132	1.1401	309.8	194.1	53.4	4N	45E
-2098 Apr 13	20:03:27	48835	4152	-50683	-2	T+	pp	0.1490	2.6198	1.5499	373.1	233.5	100.6	2S	96W
-2098 Oct 08	02:07:08	48823	4150	-50677	3	T-	p-	-0.2701	2.3522	1.3723	319.0	204.9	81.0	1S	171E
-2097 Apr 02	22:12:54	48811	4148	-50671	8	P	t-	0.8980	1.2310	0.1901	295.6	101.9	-	3N	127W
-2097 Sep 27	14:40:34	48799	4146	-50665	13	P	a-	-0.9948	1.0455	0.0199	265.7	32.4	-	6S	16W
-2096 Feb 21	21:47:48	48789	4144	-50660	-20	N	-a	-1.0302	0.9536	-0.0183	243.8	-	-	16N	119W
-2096 Aug 17	03:28:43	48776	4142	-50654	-15	N	-t	1.1848	0.7269	-0.3581	248.7	-	-	18S	152E
-2095 Feb 10	13:53:33	48764	4140	-50648	-10	T	-p	-0.3102	2.2662	1.3109	311.8	201.1	75.4	19N	0W
-2095 Aug 06	03:23:38	48752	4138	-50642	-5	P	-t	0.4644	2.0435	0.9689	355.5	206.7	-	21S	153E
-2094 Jan 31	05:34:44	48740	4135	-50636	0	T	p-	0.3987	2.1180	1.1347	318.1	198.3	53.6	22N	124E
-2094 Jul 26	07:59:48	48728	4133	-50630	5	T	p-	-0.2909	2.3357	1.3128	343.3	215.2	80.0	23S	83E
-2093 Jan 20	16:18:17	48716	4131	-50624	10	N	h-	1.1622	0.7464	-0.2948	237.4	-	-	24N	38W
-2093 Jun 16	12:18:40	48706	4129	-50619	-23	Ne	-a	1.5216	0.0391	-0.9071	52.8	-	-	20S	16E
-2093 Jul 15	19:59:06	48704	4129	-50618	15	P	a-	-1.0080	0.9923	0.0244	247.8	34.6	-	25S	98W
-2093 Dec 11	00:50:03	48694	4127	-50613	-18	N	-t	-1.1014	0.8904	-0.2151	273.2	-	-	20N	170W
-2092 Jun 05	05:32:11	48682	4125	-50607	-13	P	-a	0.8067	1.3509	0.4044	272.6	131.7	-	19S	117E
-2092 Nov 29	00:52:51	48670	4123	-50601	-8	T	-p	-0.4058	2.1539	1.0734	354.9	210.1	42.9	18N	172W
-2091 May 25	20:19:49	48658	4121	-50595	-3	T+	pp	0.0643	2.7333	1.7466	337.0	220.1	101.3	17S	105W
-2091 Nov 18	07:18:38	48646	4119	-50589	2	T	p-	0.3003	2.3193	1.2950	335.4	209.8	76.4	15N	91E
-2090 May 15	04:44:08	48633	4117	-50583	7	P	t-	-0.7400	1.5206	0.4802	318.9	155.7	-	14S	129E
-2090 Nov 07	20:19:43	48621	4115	-50577	12	P	a-	0.9534	1.0984	0.1188	254.7	74.3	-	12N	105W
-2089 Apr 04	15:45:11	48611	4113	-50572	-21	N	-t	1.3188	0.4721	-0.5952	204.3	-	-	3N	31W
-2089 May 04	06:39:27	48609	4112	-50571	17	Nb	t-	-1.5241	0.0959	-0.9723	95.7	-	-	11S	101E
-2089 Sep 29	00:55:41	48599	4111	-50566	-16	N	-a	-1.0906	0.8513	-0.1376	234.0	-	-	6S	171W
-2088 Mar 23	19:24:54	48587	4109	-50560	-11	P	-t	0.5251	1.9086	0.8807	333.3	193.7	-	6N	85W
-2088 Sep 17	11:54:30	48575	4106	-50554	-6	T	-a	-0.4254	2.0977	1.0574	338.4	203.2	37.2	10S	24E
-2087 Mar 13	06:08:13	48563	4104	-50548	-1	T-	p-	-0.2503	2.3867	1.4104	325.7	210.1	85.6	10N	114E
-2087 Sep 06	15:45:21	48551	4102	-50542	4	T	p-	0.2918	2.3659	1.2801	367.1	223.3	79.2	13S	33W
-2086 Mar 02	21:56:38	48539	4100	-50536	9	P	a-	-0.9575	1.0759	0.1257	249.5	75.9	-	13N	123W
-2086 Aug 26	15:20:12	48527	4098	-50530	14	Nx	t-	0.9980	1.0711	-0.0165	291.5	-	-	16S	27W
-2085 Jan 22	04:15:52	48517	4096	-50525	-19	P	-a	0.9653	1.0870	0.0868	263.3	65.9	-	24N	142E
-2085 Jul 17	06:00:38	48505	4094	-50519	-14	N	-h	-1.0859	0.8675	-0.1364	245.3	-	-	25S	111E
-2084 Jan 11	12:52:40	48493	4092	-50513	-9	T	-p	0.2754	2.3830	1.3227	355.4	219.5	82.0	24N	11E
-2084 Jul 05	19:44:18	48481	4090	-50507	-4	T	-p	-0.3067	2.2729	1.3173	315.4	203.6	76.8	24S	96W

-2084 Dec 30	14:18:03	48469	4088	-50501	1	T	t-	-0.4327	2.1142	1.0146	363.8	211.3	19.9	23N	11W
-2083 Jun 25	12:43:23	48457	4085	-50495	6	T	a-	0.4238	2.0527	1.1075	305.9	193.0	47.5	23S	9E
-2083 Dec 19	13:45:57	48445	4083	-50489	11	N	t-	-1.1050	0.8748	-0.2131	266.0	-	-	22N	5W
-2082 May 16	19:03:38	48434	4082	-50484	-22	N	-h	-1.4196	0.2543	-0.7478	141.9	-	-	15S	87W
-2082 Jun 15	04:18:38	48432	4081	-50483	16	N	h-	1.1942	0.6554	-0.3220	212.3	-	-	20S	135E
-2082 Nov 09	05:04:57	48422	4079	-50478	-17	N	-a	1.0947	0.8536	-0.1546	238.6	-	-	13N	123E
-2081 May 06	01:25:05	48410	4077	-50472	-12	P	-t	-0.6985	1.6030	0.5503	329.2	166.7	-	11S	179E
-2081 Oct 29	19:18:40	48398	4075	-50466	-7	T	-p	0.3989	2.1125	1.1392	309.6	193.9	53.2	8N	90W
-2080 Apr 24	02:23:16	48386	4073	-50460	-2	T+	pp	0.0636	2.7756	1.7077	374.0	235.6	105.6	6S	166E
-2080 Oct 18	10:50:29	48374	4071	-50454	3	T-	p-	-0.2666	2.3604	1.3771	320.0	205.3	81.5	3N	38E
-2079 Apr 13	04:56:02	48362	4069	-50448	8	P	t-	0.8195	1.3723	0.3366	305.8	132.3	-	1S	129E
-2079 Oct 07	23:01:26	48350	4067	-50442	13	P	a-	-0.9897	1.0577	0.0267	268.1	37.6	-	2S	144W
-2078 Mar 04	05:33:17	48340	4065	-50437	-20	N	-a	-1.0765	0.8660	-0.1006	233.7	-	-	12N	123E
-2078 Apr 02	14:18:34	48338	4065	-50436	18	Nb	a-	1.5173	0.0653	-0.9175	71.2	-	-	4N	11W
-2078 Aug 28	10:44:42	48328	4063	-50431	-15	N	-t	1.2249	0.6557	-0.4341	238.4	-	-	15S	41E
-2077 Feb 21	21:55:29	48316	4061	-50425	-10	T	-p	-0.3527	2.1869	1.2344	309.7	198.3	67.2	16N	123W
-2077 Aug 17	10:34:53	48304	4059	-50419	-5	P	-t	0.5108	1.9591	0.8829	351.5	200.1	-	19S	43E
-2076 Feb 11	13:36:44	48292	4057	-50413	0	T	p-	0.3645	2.1806	1.1977	320.7	201.8	63.8	20N	2E
-2076 Aug 05	15:27:26	48280	4054	-50407	5	T-	p-	-0.2396	2.4298	1.4071	344.1	217.6	87.8	22S	30W
-2075 Jan 31	00:07:11	48268	4052	-50401	10	N	t-	1.1367	0.7930	-0.2482	244.3	-	-	23N	156W
-2075 Jul 26	03:40:05	48256	4050	-50395	15	P	a-	-0.9512	1.0966	0.1283	256.9	78.1	-	24S	146E
-2075 Dec 21	08:42:50	48246	4048	-50390	-18	N	-t	-1.1110	0.8717	-0.2317	270.6	-	-	22N	71E
-2074 Jun 16	12:55:53	48234	4046	-50384	-13	P	-a	0.8794	1.2189	0.2694	263.4	109.8	-	21S	5E
-2074 Dec 10	09:03:00	48222	4044	-50378	-8	T	-p	-0.4089	2.1462	1.0697	353.4	209.4	41.8	21N	64E
-2073 Jun 06	03:21:50	48210	4042	-50372	-3	T+	pp	0.1423	2.5923	1.6012	337.5	219.0	97.6	19S	148E
-2073 Nov 29	15:55:29	48198	4040	-50366	2	T	p-	0.3002	2.3175	1.2969	334.1	209.3	76.5	19N	40W
-2072 May 25	11:16:00	48186	4038	-50360	7	P	t-	-0.6575	1.6737	0.6300	329.8	174.6	-	17S	29E
-2072 Nov 18	05:11:36	48174	4036	-50354	12	P	a-	0.9524	1.0995	0.1212	254.4	74.9	-	16N	120E
-2071 Apr 14	22:12:19	48164	4034	-50349	-21	N	-t	1.3966	0.3277	-0.7361	172.1	-	-	1S	131W
-2071 May 14	12:54:55	48162	4034	-50348	17	N	t-	-1.4379	0.2540	-0.8140	153.6	-	-	14S	4E
-2071 Oct 09	09:30:40	48152	4032	-50343	-16	N	-a	-1.1016	0.8333	-0.1600	232.7	-	-	1S	58E
-2070 Apr 04	02:20:54	48140	4030	-50337	-11	P	-t	0.5951	1.7772	0.7551	325.4	182.7	-	2N	168E
-2070 Sep 28	20:01:52	48128	4028	-50331	-6	T	-a	-0.4419	2.0705	1.0243	339.0	201.8	24.5	5S	100W
-2069 Mar 24	13:36:56	48116	4026	-50325	-1	T-	p-	-0.1879	2.4985	1.5275	326.1	212.6	92.6	6N	1W
-2069 Sep 17	23:21:55	48104	4023	-50319	4	T+	p-	0.2666	2.4146	1.3239	369.4	225.3	83.8	9S	150W
-2068 Mar 13	05:43:53	48092	4021	-50313	9	P	a-	-0.9035	1.1736	0.2264	257.6	100.5	-	9N	118E
-2068 Sep 05	22:46:22	48080	4019	-50307	14	P	t-	0.9640	1.1345	0.0448	297.8	51.8	-	13S	141W
-2067 Feb 01	12:20:20	48070	4018	-50302	-19	P	-a	0.9975	1.0278	0.0277	258.4	37.6	-	22N	20E
-2067 Jul 27	13:28:13	48058	4015	-50296	-14	N	-h	-1.1361	0.7752	-0.2283	233.2	-	-	24S	2W



-2066 Jan 21	20:40:38	48046	4013	-50290	-9	T	-p	0.3017	2.3347	1.2746	355.3	218.4	77.2	23N	106W
-2066 Jul 17	03:23:43	48034	4011	-50284	-4	T	-p	-0.3648	2.1666	1.2103	312.2	199.0	64.7	24S	148E
-2065 Jan 10	21:56:25	48022	4009	-50278	1	T	t-	-0.4114	2.1521	1.0549	365.1	213.9	38.1	24N	127W
-2065 Jul 06	20:18:25	48010	4007	-50272	6	T	p-	0.3605	2.1705	1.2221	310.0	198.5	65.9	23S	106W
-2065 Dec 30	21:41:01	47998	4005	-50266	11	N	t-	-1.0907	0.8987	-0.1844	268.1	-	-	23N	124W
-2064 May 27	01:56:09	47987	4003	-50261	-22	Ne	-h	-1.5015	0.1060	-0.9001	93.3	-	-	19S	168E
-2064 Jun 25	11:32:24	47986	4003	-50260	16	N	h-	1.1292	0.7773	-0.2052	229.4	-	-	22S	25E
-2064 Nov 19	13:48:28	47976	4001	-50255	-17	N	-a	1.0894	0.8618	-0.1437	238.8	-	-	17N	9W
-2063 May 16	07:48:42	47964	3999	-50249	-12	P	-t	-0.7864	1.4426	0.3878	319.1	143.9	-	14S	80E
-2063 Nov 09	04:12:49	47952	3997	-50243	-7	T	-p	0.3969	2.1162	1.1430	309.5	194.0	53.8	12N	135E
-2062 May 05	08:39:23	47940	3995	-50237	-2	T-	pp	-0.0251	2.8452	1.7790	373.8	235.9	106.5	10S	69E
-2062 Oct 29	19:38:03	47928	3993	-50231	3	T-	p-	-0.2671	2.3610	1.3747	320.9	205.5	81.4	8N	96W
-2061 Apr 24	11:37:20	47916	3991	-50225	8	P	t-	0.7383	1.5189	0.4879	314.9	155.2	-	5S	25E
-2061 Oct 19	07:26:01	47904	3988	-50219	13	P	a-	-0.9884	1.0626	0.0267	269.7	37.7	-	3N	87E
-2060 Mar 14	13:13:49	47894	3987	-50214	-20	N	-a	-1.1274	0.7701	-0.1915	221.8	-	-	8N	5E
-2060 Apr 12	21:32:49	47892	3986	-50213	18	N	a-	1.4457	0.1942	-0.7836	120.8	-	-	0S	122W
-2060 Sep 07	18:09:32	47882	3985	-50208	-15	N	-t	1.2575	0.5981	-0.4960	229.4	-	-	12S	72W
-2059 Mar 04	05:50:44	47870	3982	-50202	-10	T	-a	-0.4006	2.0978	1.1477	307.2	194.6	54.9	13N	116E
-2059 Aug 27	17:55:57	47858	3980	-50196	-5	P	-t	0.5497	1.8886	0.8109	347.7	193.9	-	16S	69W
-2058 Feb 21	21:29:25	47846	3978	-50190	0	T	p-	0.3233	2.2560	1.2734	323.6	205.5	73.4	17N	118W
-2058 Aug 16	23:05:45	47834	3976	-50184	5	T-	p-	-0.1964	2.5090	1.4864	344.2	219.0	92.7	20S	146W
-2057 Feb 11	07:43:20	47822	3974	-50178	10	N	t-	1.1021	0.8564	-0.1846	253.1	-	-	20N	89E
-2057 Aug 06	11:31:36	47810	3972	-50172	15	P	a-	-0.9028	1.1858	0.2168	264.0	100.0	-	23S	27E
-2056 Jan 01	16:27:35	47800	3970	-50167	-18	N	-t	-1.1263	0.8420	-0.2584	266.5	-	-	23N	46W
-2056 Jun 26	20:23:55	47788	3968	-50161	-13	P	-a	0.9480	1.0949	0.1418	253.8	81.3	-	22S	109W
-2056 Dec 20	17:08:45	47776	3966	-50155	-8	T	-p	-0.4161	2.1307	1.0589	351.5	208.3	38.5	22N	58W
-2055 Jun 16	10:24:59	47764	3964	-50149	-3	T+	-p	0.2182	2.4557	1.4596	337.3	216.6	90.8	21S	40E
-2055 Dec 10	00:30:14	47752	3962	-50143	2	T	p-	0.2976	2.3202	1.3039	332.8	209.0	77.0	21N	170W
-2054 Jun 05	17:45:52	47740	3960	-50137	7	P	t-	-0.5739	1.8290	0.7814	339.4	190.0	-	20S	71W
-2054 Nov 29	14:03:38	47728	3958	-50131	12	P	a-	0.9515	1.1002	0.1238	254.1	75.6	-	19N	14W
-2053 Apr 26	04:34:46	47718	3956	-50126	-21	N	-t	1.4779	0.1770	-0.8838	127.9	-	-	5S	130E
-2053 May 25	19:09:40	47716	3956	-50125	17	N	t-	-1.3503	0.4149	-0.6535	193.4	-	-	18S	92W
-2053 Oct 20	18:10:54	47706	3954	-50120	-16	N	-a	-1.1079	0.8238	-0.1736	232.4	-	-	3N	75W
-2052 Apr 14	09:13:50	47694	3952	-50114	-11	P	-t	0.6684	1.6400	0.6232	316.4	169.1	-	2S	61E
-2052 Oct 09	04:15:30	47682	3950	-50108	-6	T	-a	-0.4522	2.0544	1.0027	339.9	201.1	8.2	1S	134E
-2051 Apr 03	21:00:54	47670	3948	-50102	-1	T-	p-	-0.1207	2.6193	1.6532	326.2	214.4	97.4	2N	115W
-2051 Sep 28	07:05:57	47658	3946	-50096	4	T+	pp	0.2477	2.4515	1.3563	371.2	226.7	86.8	5S	92E
-2050 Mar 24	13:24:50	47646	3943	-50090	9	P	a-	-0.8441	1.2812	0.3366	265.6	120.6	-	5N	0E
-2050 Sep 17	06:21:58	47634	3941	-50084	14	P	t-	0.9367	1.1856	0.0939	302.5	74.4	-	9S	103E
-2049 Feb 12	20:14:48	47624	3940	-50079	-19	N	-a	1.0373	0.9547	-0.0453	251.8	-	-	20N	100W

-2049 Aug 07	21:05:54	47612	3938	-50073	-14	N	-a	-1.1791	0.6961	-0.3071	222.0	-	-	22S	117W
-2048 Feb 02	04:19:19	47600	3935	-50067	-9	T	-t	0.3352	2.2730	1.2134	354.6	216.4	69.7	22N	138E
-2048 Jul 27	11:10:43	47589	3933	-50061	-4	T	-p	-0.4171	2.0711	1.1137	308.9	194.1	48.9	23S	30E
-2047 Jan 21	05:26:59	47577	3931	-50055	1	T	t-	-0.3836	2.2016	1.1073	366.6	217.0	52.4	23N	120E
-2047 Jul 17	03:59:09	47565	3929	-50049	6	T	p-	0.3019	2.2798	1.3277	313.3	202.7	77.3	24S	137E
-2046 Jan 10	05:28:45	47553	3927	-50043	11	N	t-	-1.0697	0.9346	-0.1432	271.4	-	-	23N	118E
-2046 Jul 06	18:50:08	47541	3925	-50037	16	N	h-	1.0679	0.8925	-0.0956	244.0	-	-	23S	86W
-2046 Nov 30	22:30:52	47531	3923	-50032	-17	N	-a	1.0859	0.8665	-0.1355	238.5	-	-	20N	141W
-2045 May 27	14:12:10	47519	3921	-50026	-12	P	-t	-0.8736	1.2842	0.2266	307.4	112.9	-	18S	18W
-2045 Nov 20	13:06:18	47507	3919	-50020	-7	T	-p	0.3958	2.1179	1.1453	309.3	194.0	54.2	16N	1W
-2044 May 15	14:56:26	47495	3917	-50014	-2	T-	pp	-0.1135	2.6824	1.6175	372.3	234.2	103.2	14S	28W
-2044 Nov 09	04:27:21	47483	3915	-50008	3	T-	p-	-0.2691	2.3585	1.3698	321.7	205.7	81.1	12N	129E
-2043 May 04	18:17:05	47471	3913	-50002	8	P	t-	0.6544	1.6707	0.6440	322.8	173.3	-	9S	78W
-2043 Oct 29	15:54:36	47459	3911	-49996	13	P	a-	-0.9909	1.0602	0.0199	270.6	32.7	-	7N	42W
-2042 Mar 25	20:47:10	47449	3909	-49991	-20	N	-a	-1.1849	0.6623	-0.2948	207.3	-	-	4N	111W
-2042 Apr 24	04:43:12	47447	3909	-49990	18	N	a-	1.3695	0.3317	-0.6416	155.3	-	-	5S	127E
-2042 Sep 19	01:44:13	47437	3907	-49985	-15	N	-t	1.2818	0.5556	-0.5425	222.4	-	-	8S	172E
-2041 Mar 15	13:36:44	47425	3905	-49979	-10	T	-a	-0.4563	1.9946	1.0466	303.9	189.6	31.8	9N	3W
-2041 Sep 08	01:29:03	47413	3903	-49973	-5	P	-t	0.5793	1.8349	0.7560	344.5	188.6	-	12S	176E
-2040 Mar 04	05:13:12	47402	3901	-49967	0	T	p-	0.2754	2.3438	1.3613	326.6	209.3	82.0	13N	124E
-2040 Aug 27	06:54:07	47390	3899	-49961	5	T-	p-	-0.1605	2.5749	1.5523	344.0	219.7	95.7	17S	95E
-2039 Feb 21	15:10:48	47378	3897	-49955	10	N	t-	1.0612	0.9315	-0.1095	262.7	-	-	17N	25W
-2039 Aug 16	19:31:21	47366	3895	-49949	15	P	a-	-0.8607	1.2636	0.2936	269.6	114.8	-	20S	95W
-2038 Jan 12	00:05:56	47356	3893	-49944	-18	N	-t	-1.1473	0.8018	-0.2950	260.8	-	-	23N	161W
-2038 Jul 08	03:55:43	47344	3891	-49938	-13	P	-a	1.0132	0.9775	0.0202	243.6	31.2	-	23S	137E
-2038 Aug 06	11:53:08	47342	3890	-49937	25	Nb	a-	-1.5305	0.0265	-0.9274	43.4	-	-	23S	19E
-2037 Jan 01	01:10:29	47332	3889	-49932	-8	T	-p	-0.4275	2.1071	1.0406	349.2	206.7	32.1	23N	179W
-2037 Jun 27	17:31:36	47320	3887	-49926	-3	T	-a	0.2904	2.3259	1.3243	336.4	213.1	80.4	23S	68W
-2037 Dec 21	09:01:16	47308	3884	-49920	2	T	p-	0.2910	2.3299	1.3184	331.6	209.0	78.3	23N	62E
-2036 Jun 16	00:19:31	47296	3882	-49914	7	P	t-	-0.4938	1.9780	0.9262	347.5	202.1	-	22S	171W
-2036 Dec 09	22:53:23	47284	3880	-49908	12	P	a-	0.9485	1.1045	0.1304	254.1	77.5	-	22N	147W
-2035 May 06	10:56:38	47275	3879	-49903	-21	Ne	-t	1.5597	0.0255	-1.0326	49.1	-	-	9S	32E
-2035 Jun 05	01:26:33	47273	3878	-49902	17	N	t-	-1.2636	0.5742	-0.4947	224.1	-	-	20S	172E
-2035 Oct 31	02:53:48	47263	3877	-49897	-16	N	-a	-1.1118	0.8184	-0.1825	232.5	-	-	7N	152E
-2034 Apr 25	16:04:51	47251	3874	-49891	-11	P	-t	0.7441	1.4986	0.4868	306.2	152.2	-	6S	44W
-2034 Oct 20	12:33:02	47239	3872	-49885	-6	P	-a	-0.4588	2.0446	0.9882	341.0	200.7	-	4N	7E
-2033 Apr 15	04:20:53	47227	3870	-49879	-1	T-	pp	-0.0493	2.7483	1.7865	325.7	215.2	100.1	3S	132E
-2033 Oct 09	14:57:03	47215	3868	-49873	4	T+	pp	0.2349	2.4769	1.3779	372.6	227.6	88.7	0S	28W
-2032 Apr 03	21:00:01	47203	3866	-49867	9	P	a-	-0.7796	1.3985	0.4560	273.7	137.9	-	1N	117W
-2032 Sep 27	14:06:25	47191	3864	-49861	14	P	t-	0.9158	1.2244	0.1315	305.8	87.4	-	4S	15W

-2031 Feb 23	03:59:03	47181	3862	-49856	-19	N	-a	1.0849	0.8674	-0.1327	243.0	-	-	17N	142E
-2031 Mar 24	13:26:43	47179	3862	-49855	19	Nb	a-	-1.5262	0.0411	-0.9261	55.4	-	-	4N	3W
-2031 Aug 18	04:54:01	47169	3860	-49850	-14	N	-a	-1.2149	0.6304	-0.3728	212.0	-	-	20S	124E
-2031 Sep 16	17:38:47	47167	3860	-49849	24	N	a-	1.5583	0.0201	-1.0221	41.5	-	-	8S	68W
-2030 Feb 12	11:45:20	47157	3858	-49844	-9	T	-t	0.3782	2.1937	1.1348	353.2	213.2	57.1	19N	25E
-2030 Aug 07	19:06:25	47146	3856	-49838	-4	T	-a	-0.4627	1.9884	1.0294	305.8	189.3	25.4	22S	90W
-2029 Feb 01	12:47:02	47134	3854	-49832	1	T	p-	-0.3472	2.2668	1.1758	368.4	220.7	65.6	21N	9E
-2029 Jul 28	11:46:51	47122	3852	-49826	6	T+	p-	0.2496	2.3778	1.4217	316.1	205.9	84.8	23S	19E
-2028 Jan 21	13:09:36	47110	3850	-49820	11	N	t-	-1.0422	0.9821	-0.0900	275.8	-	-	22N	2E
-2028 Jul 17	02:13:04	47098	3848	-49814	16	P	h-	1.0116	0.9989	0.0048	256.5	15.8	-	23S	162E
-2028 Dec 11	07:12:34	47088	3846	-49809	-17	N	-a	1.0839	0.8684	-0.1298	237.9	-	-	22N	87E
-2027 Jun 06	20:34:31	47076	3844	-49803	-12	P	-t	-0.9606	1.1259	0.0654	293.7	62.2	-	21S	115W
-2027 Nov 30	22:00:20	47064	3842	-49797	-7	T	-p	0.3945	2.1199	1.1483	309.2	194.1	54.7	19N	136W
-2026 May 26	21:13:40	47053	3840	-49791	-2	T-	pp	-0.2023	2.5191	1.4550	369.6	230.6	95.2	17S	125W
-2026 Nov 20	13:16:48	47041	3838	-49785	3	T-	p-	-0.2718	2.3545	1.3638	322.4	205.9	80.8	15N	5W
-2025 May 16	00:58:30	47029	3836	-49779	8	P	t-	0.5706	1.8226	0.7996	329.3	187.5	-	13S	179E
-2025 Nov 10	00:24:13	47017	3834	-49773	13	P	a-	-0.9948	1.0549	0.0109	271.1	24.3	-	11N	172W
-2024 Apr 05	04:17:26	47007	3832	-49768	-20	N	-a	-1.2452	0.5495	-0.4035	190.4	-	-	0S	133E
-2024 May 04	11:54:20	47005	3832	-49767	18	N	a-	1.2930	0.4702	-0.4993	181.7	-	-	9S	16E
-2024 Sep 29	09:25:09	46995	3830	-49762	-15	N	-t	1.3007	0.5226	-0.5789	216.6	-	-	3S	54E
-2023 Mar 25	21:17:30	46983	3828	-49756	-10	P	-a	-0.5161	1.8840	0.9375	299.9	183.2	-	5N	121W
-2023 Sep 18	09:11:36	46971	3826	-49750	-5	P	-t	0.6017	1.7943	0.7145	341.7	184.3	-	8S	58E
-2022 Mar 15	12:46:43	46959	3824	-49744	0	T+	p-	0.2199	2.4458	1.4631	329.5	212.9	89.6	9N	8E
-2022 Sep 07	14:53:28	46948	3822	-49738	5	T-	p-	-0.1329	2.6255	1.6031	343.4	219.9	97.4	13S	27W
-2021 Mar 04	22:26:06	46936	3820	-49732	10	Nx	t-	1.0114	1.0229	-0.0181	273.6	-	-	14N	136W
-2021 Aug 28	03:41:21	46924	3818	-49726	15	P	a-	-0.8267	1.3266	0.3556	273.8	125.0	-	17S	141E
-2020 Jan 23	07:34:14	46914	3816	-49721	-18	N	-t	-1.1760	0.7471	-0.3458	252.7	-	-	22N	86E
-2020 Jul 18	11:34:28	46902	3814	-49715	-13	N	-a	1.0719	0.8720	-0.0899	233.3	-	-	23S	21E
-2020 Aug 16	19:57:56	46900	3814	-49714	25	N	a-	-1.4937	0.0959	-0.8617	82.3	-	-	21S	103W
-2019 Jan 11	09:05:29	46890	3812	-49709	-8	T	-t	-0.4451	2.0718	1.0113	346.4	204.4	17.0	23N	62E
-2019 Jul 08	00:40:43	46878	3810	-49703	-3	T	-a	0.3593	2.2025	1.1949	335.0	208.5	65.3	24S	176W
-2019 Dec 31	17:27:56	46867	3808	-49697	2	T	p-	0.2802	2.3470	1.3408	330.6	209.3	80.2	24N	65W
-2018 Jun 27	06:54:50	46855	3806	-49691	7	T	t-	-0.4160	2.1231	1.0666	354.4	211.7	41.5	24S	89E
-2018 Dec 21	07:38:56	46843	3804	-49685	12	P	a-	0.9423	1.1146	0.1432	254.5	81.0	-	24N	80E
-2017 Jun 16	07:46:45	46831	3802	-49679	17	N	t-	-1.1790	0.7300	-0.3400	248.8	-	-	23S	75E
-2017 Nov 11	11:39:01	46821	3800	-49674	-16	N	-a	-1.1131	0.8176	-0.1864	233.1	-	-	12N	19E
-2016 May 05	22:55:26	46809	3798	-49668	-11	P	-t	0.8211	1.3551	0.3476	294.7	130.9	-	10S	150W
-2016 Oct 30	20:53:30	46797	3796	-49662	-6	P	-a	-0.4622	2.0406	0.9799	342.3	200.7	-	8N	120W
-2015 Apr 25	11:38:52	46786	3794	-49656	-1	T+	pp	0.0246	2.7917	1.8337	324.6	215.0	100.4	7S	20E
-2015 Oct 19	22:53:39	46774	3792	-49650	4	T+	pp	0.2267	2.4935	1.3914	373.7	228.2	89.8	4N	150W

-2014 Apr 15	04:29:39	46762	3790	-49644	9	P	a-	-0.7105	1.5246	0.5836	281.4	153.0	-	3S	128E
-2014 Oct 08	21:59:21	46750	3788	-49638	14	P	t-	0.9012	1.2517	0.1579	307.8	95.3	-	0N	136W
-2013 Mar 06	11:34:04	46740	3786	-49633	-19	N	-a	1.1392	0.7679	-0.2325	231.8	-	-	13N	26E
-2013 Apr 04	20:52:54	46738	3786	-49632	19	N	a-	-1.4675	0.1492	-0.8187	104.9	-	-	0N	117W
-2013 Aug 29	12:51:52	46728	3784	-49627	-14	N	-a	-1.2436	0.5778	-0.4254	203.3	-	-	17S	3E
-2013 Sep 28	01:46:52	46726	3783	-49626	24	N	a-	1.5376	0.0578	-0.9838	70.1	-	-	4S	167E
-2012 Feb 23	19:02:06	46717	3782	-49621	-9	T	-t	0.4280	2.1020	1.0437	351.0	208.7	33.5	16N	86W
-2012 Aug 18	03:11:03	46705	3780	-49615	-4	P	-a	-0.5011	1.9187	0.9580	303.0	184.7	-	19S	148E
-2011 Feb 11	19:58:20	46693	3778	-49609	1	T	p-	-0.3035	2.3452	1.2577	370.2	224.4	77.3	19N	100W
-2011 Aug 07	19:41:10	46681	3776	-49603	6	T+	p-	0.2032	2.4653	1.5047	318.4	208.2	89.9	21S	100W
-2010 Jan 31	20:42:27	46669	3774	-49597	11	Nx	t-	-1.0072	1.0431	-0.0228	281.3	-	-	21N	112W
-2010 Jul 28	09:42:26	46657	3772	-49591	16	P	h-	0.9610	1.0948	0.0944	267.0	69.4	-	22S	48E
-2010 Dec 22	15:48:39	46648	3770	-49586	-17	N	-a	1.0872	0.8600	-0.1337	236.1	-	-	24N	42W
-2009 Jun 18	03:00:52	46636	3768	-49580	-12	N	-t	-1.0437	0.9753	-0.0887	278.5	-	-	23S	146E
-2009 Dec 12	06:50:42	46624	3766	-49574	-7	T	-p	0.3968	2.1149	1.1448	308.9	193.9	54.1	22N	91E
-2008 Jun 06	03:34:28	46612	3764	-49568	-2	T	pp	-0.2886	2.3606	1.2969	365.9	225.1	81.7	20S	138E
-2008 Nov 30	22:04:15	46600	3762	-49562	3	T	p-	-0.2732	2.3528	1.3607	323.2	206.3	80.6	19N	138W
-2007 May 26	07:41:53	46588	3760	-49556	8	P	t-	0.4869	1.9746	0.9548	334.6	198.6	-	17S	76E
-2007 Nov 20	08:53:51	46577	3758	-49550	13	P	h-	-0.9996	1.0476	0.0006	271.4	5.7	-	15N	59E
-2006 Apr 16	11:41:35	46567	3756	-49545	-20	N	-a	-1.3110	0.4271	-0.5225	169.4	-	-	4S	19E
-2006 May 15	19:03:54	46565	3756	-49544	18	N	a-	1.2141	0.6134	-0.3529	203.9	-	-	13S	94W
-2006 Oct 10	17:15:06	46555	3754	-49539	-15	N	-t	1.3121	0.5031	-0.6012	213.1	-	-	1N	66W
-2005 Apr 06	04:51:04	46543	3752	-49533	-10	P	-a	-0.5819	1.7628	0.8173	295.0	174.8	-	0N	123E
-2005 Sep 29	17:03:55	46531	3750	-49527	-5	P	-t	0.6167	1.7669	0.6867	339.5	181.1	-	4S	62W
-2004 Mar 25	20:12:35	46519	3748	-49521	0	T+	pp	0.1587	2.5584	1.5750	332.3	216.1	95.6	5N	106W
-2004 Sep 17	23:02:53	46508	3746	-49515	5	T-	p-	-0.1127	2.6624	1.6402	342.7	219.8	98.3	9S	152W
-2003 Mar 15	05:32:17	46496	3744	-49509	10	P	t-	0.9548	1.1268	0.0857	284.9	69.1	-	10N	115E
-2003 Sep 07	11:59:34	46484	3742	-49503	15	P	a-	-0.7990	1.3779	0.4056	276.9	132.2	-	13S	15E
-2002 Feb 02	14:55:08	46474	3740	-49498	-18	N	-t	-1.2107	0.6812	-0.4073	242.4	-	-	20N	26W
-2002 Jul 29	19:18:48	46462	3738	-49492	-13	N	-a	1.1254	0.7763	-0.1906	223.1	-	-	22S	96W
-2002 Aug 28	04:10:13	46460	3737	-49491	25	N	a-	-1.4633	0.1537	-0.8078	103.8	-	-	18S	132E
-2001 Jan 22	16:53:31	46451	3736	-49486	-8	P	-t	-0.4690	2.0247	0.9705	343.0	201.3	-	22N	56W
-2001 Jul 19	07:55:56	46439	3734	-49480	-3	T	-a	0.4221	2.0905	1.0766	333.3	203.1	42.6	23S	74E
-2000 Jan 12	01:49:07	46427	3732	-49474	2	T+	p-	0.2644	2.3732	1.3725	329.7	209.8	82.8	24N	169E
-2000 Jul 07	13:35:04	46415	3730	-49468	7	T	t-	-0.3428	2.2599	1.1986	360.1	219.1	68.7	24S	12W
-2000 Dec 31	16:19:19	46404	3728	-49462	12	P	a-	0.9318	1.1324	0.1640	255.7	86.3	-	25N	50W

# 2ND MILLENNIUM BCE

In the 2nd millennium BCE the total number of lunar eclipses was 2 431 lunar eclipses: 900 penumbral lunar eclipses, 859 partial lunar eclipses, 672 total lunar eclipses (435 central total lunar eclipses, 237 non-central total lunar eclipses).

## 20TH CENTURY BCE

In the 20th century BCE the total number of lunar eclipses was 242 lunar eclipses: 88 penumbral lunar eclipses, 92 partial lunar eclipses, 62 total lunar eclipses (49 central total lunar eclipses, 13 non-central total lunar eclipses).

	CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
	DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST			S								m	m	m	°	°
	ECLIPSE															
-1999 Jun 26	14:12:34	46392	3726	-49456	17	N	t-	-1.0984	0.8786	-0.1927	268.8	-	-	24S	22W	
-1999 Nov 21	20:23:00	46382	3724	-49451	-16	N	-a	-1.1153	0.8148	-0.1916	233.5	-	-	15N	114W	
-1998 May 17	05:46:39	46370	3722	-49445	-11	P	-t	0.8986	1.2111	0.2075	281.9	102.9	-	13S	105E	
-1998 Nov 11	05:14:53	46358	3720	-49439	-6	P	-a	-0.4641	2.0388	0.9746	343.5	200.9	-	12N	113E	
-1997 May 06	18:55:55	46346	3718	-49433	-1	T+	pp	0.1000	2.6517	1.6967	322.9	213.6	98.3	11S	92W	
-1997 Oct 31	06:52:59	46335	3716	-49427	4	T+	pp	0.2210	2.5051	1.4008	374.5	228.7	90.5	9N	88E	
-1996 Apr 25	11:56:16	46323	3714	-49421	9	P	a-	-0.6387	1.6559	0.7156	288.7	166.0	-	7S	13E	
-1996 Oct 19	05:59:25	46311	3712	-49415	14	P	t-	0.8919	1.2688	0.1750	308.8	99.9	-	5N	101E	
-1995 Mar 16	18:58:27	46301	3710	-49410	-19	N	-a	1.2012	0.6544	-0.3466	217.2	-	-	9N	87W	
-1995 Apr 15	04:11:21	46299	3710	-49409	19	N	a-	-1.4031	0.2679	-0.7012	139.5	-	-	4S	130E	

-1995 Sep 08	21:00:02	46290	3708	-49404	-14	N	-a	-1.2649	0.5387	-0.4646	196.5	-	-	13S	121W
-1995 Oct 08	10:04:19	46288	3708	-49403	24	N	a-	1.5234	0.0833	-0.9575	83.6	-	-	1N	40E
-1994 Mar 06	02:06:49	46278	3706	-49398	-9	P	-t	0.4869	1.9937	0.9360	347.7	202.2	-	13N	166E
-1994 Aug 29	11:24:55	46266	3704	-49392	-4	P	-a	-0.5324	1.8622	0.8995	300.5	180.6	-	16S	23E
-1993 Feb 23	02:58:39	46254	3702	-49386	1	T-	pp	-0.2506	2.4405	1.3567	371.9	228.2	87.6	16N	153E
-1993 Aug 19	03:44:03	46242	3700	-49380	6	T+	p-	0.1641	2.5393	1.5741	320.3	209.9	93.2	19S	137E
-1992 Feb 12	04:08:24	46231	3698	-49374	11	P	t-	-0.9655	1.1165	0.0569	287.5	57.1	-	18N	135E
-1992 Aug 07	17:17:14	46219	3696	-49368	16	P	h-	0.9156	1.1815	0.1746	276.1	93.6	-	20S	67W
-1991 Jan 02	00:21:32	46209	3694	-49363	-17	N	-a	1.0939	0.8453	-0.1438	233.7	-	-	25N	171W
-1991 Jun 28	09:29:50	46197	3692	-49357	-12	N	-t	-1.1239	0.8300	-0.2378	261.4	-	-	24S	48E
-1991 Dec 22	15:37:36	46186	3690	-49351	-7	T	-p	0.4019	2.1046	1.1364	308.4	193.6	52.7	23N	42W
-1990 Jun 17	09:59:01	46174	3688	-49345	-2	T	-t	-0.3721	2.2072	1.1437	361.0	217.8	59.9	22S	40E
-1990 Dec 12	06:48:35	46162	3686	-49339	3	T-	p-	-0.2725	2.3546	1.3615	324.1	206.7	80.9	21N	90E
-1989 Jun 06	14:30:21	46150	3684	-49333	8	T	h-	0.4063	2.1211	1.1040	338.5	207.0	49.8	19S	28W
-1989 Dec 01	17:20:08	46138	3682	-49327	13	Nx	h-	-1.0025	1.0435	-0.0059	271.9	-	-	18N	69W
-1988 Apr 26	19:05:22	46129	3680	-49322	-20	N	-a	-1.3775	0.3037	-0.6430	144.2	-	-	9S	95W
-1988 May 26	02:17:18	46127	3680	-49321	18	N	a-	1.1373	0.7530	-0.2107	222.0	-	-	16S	156E
-1988 Oct 21	01:09:33	46117	3678	-49316	-15	N	-t	1.3198	0.4900	-0.6163	210.8	-	-	6N	173E
-1987 Apr 16	12:19:41	46105	3676	-49310	-10	P	-a	-0.6515	1.6348	0.6898	289.0	164.2	-	4S	8E
-1987 Oct 10	01:03:59	46093	3674	-49304	-5	P	-t	0.6260	1.7498	0.6697	337.8	178.9	-	1N	175E
-1986 Apr 06	03:30:09	46082	3672	-49298	0	T+	pp	0.0913	2.6826	1.6980	334.7	218.5	99.9	1N	141E
-1986 Sep 29	07:21:08	46070	3670	-49292	5	T-	p-	-0.0991	2.6870	1.6655	341.7	219.4	98.8	5S	82E
-1985 Mar 26	12:27:44	46058	3668	-49286	10	P	t-	0.8903	1.2455	0.2038	296.6	105.2	-	6N	8E
-1985 Sep 18	20:27:14	46046	3666	-49280	15	P	a-	-0.7789	1.4154	0.4421	279.0	137.0	-	9S	114W
-1984 Feb 13	22:06:02	46037	3664	-49275	-18	N	-t	-1.2532	0.6009	-0.4829	229.0	-	-	18N	135W
-1984 Aug 09	03:10:10	46025	3662	-49269	-13	N	-a	1.1725	0.6926	-0.2796	213.2	-	-	20S	145E
-1984 Sep 07	12:30:22	46023	3662	-49268	25	N	a-	-1.4396	0.1992	-0.7662	117.9	-	-	14S	5E
-1983 Feb 02	00:34:00	46013	3660	-49263	-8	P	-t	-0.4999	1.9647	0.9170	338.9	197.0	-	21N	172W
-1983 Jul 29	15:16:32	46001	3658	-49257	-3	P	-a	0.4791	1.9893	0.9688	331.3	197.2	-	22S	38W
-1982 Jan 22	10:02:23	45990	3656	-49251	2	T+	p-	0.2412	2.4127	1.4180	329.0	210.7	86.1	23N	45E
-1982 Jul 18	20:20:47	45978	3654	-49245	7	T	pp	-0.2746	2.3877	1.3211	364.7	224.6	83.7	24S	114W
-1981 Jan 12	00:53:17	45966	3652	-49239	12	P	a-	0.9161	1.1595	0.1944	257.6	93.5	-	25N	179W
-1981 Jul 07	20:45:09	45954	3650	-49233	17	Nx	t-	-1.0222	1.0191	-0.0537	285.2	-	-	25S	122W
-1981 Dec 03	05:05:08	45945	3649	-49228	-16	N	-a	-1.1185	0.8099	-0.1984	233.7	-	-	18N	114E
-1980 May 27	12:40:58	45933	3647	-49222	-11	P	-t	0.9743	1.0705	0.0702	267.9	60.8	-	17S	1W
-1980 Nov 21	13:36:31	45921	3645	-49216	-6	P	-a	-0.4651	2.0384	0.9714	344.7	201.2	-	16N	14W
-1979 May 17	02:12:07	45909	3643	-49210	-1	T+	pp	0.1768	2.5096	1.5571	320.5	211.0	93.3	14S	156E
-1979 Nov 10	14:55:30	45898	3641	-49204	4	T+	pp	0.2181	2.5111	1.4053	375.1	229.0	90.9	13N	35W
-1978 May 06	19:20:05	45886	3639	-49198	9	P	a-	-0.5649	1.7913	0.8511	295.3	177.0	-	11S	100W

-1978 Oct 30	14:04:08	45874	3637	-49192	14	P	t-	0.8857	1.2799	0.1867	309.2	102.9	-	9N	22W
-1977 Mar 28	02:14:49	45864	3635	-49187	-19	N	-a	1.2688	0.5309	-0.4711	198.7	-	-	5N	161E
-1977 Apr 26	11:25:46	45862	3635	-49186	19	N	a-	-1.3361	0.3918	-0.5791	167.3	-	-	8S	19E
-1977 Sep 20	05:17:19	45853	3633	-49181	-14	N	-a	-1.2798	0.5113	-0.4919	191.3	-	-	9S	113E
-1977 Oct 19	18:27:50	45851	3633	-49180	24	N	a-	1.5136	0.1006	-0.9387	91.5	-	-	5N	88W
-1976 Mar 16	09:03:34	45841	3631	-49175	-9	P	-t	0.5516	1.8748	0.8174	343.3	193.5	-	9N	59E
-1976 Sep 08	19:46:18	45829	3629	-49169	-4	P	-a	-0.5579	1.8165	0.8519	298.4	177.0	-	13S	105W
-1975 Mar 05	09:51:07	45818	3627	-49163	1	T-	pp	-0.1910	2.5479	1.4678	373.4	231.5	95.9	12N	48E
-1975 Aug 29	11:54:24	45806	3625	-49157	6	T+	p-	0.1316	2.6015	1.6314	321.9	211.0	95.3	15S	13E
-1974 Feb 22	11:24:34	45794	3623	-49151	11	P	t-	-0.9148	1.2063	0.1531	294.7	92.1	-	15N	24E
-1974 Aug 19	01:00:31	45782	3621	-49145	16	P	h-	0.8778	1.2543	0.2406	283.6	109.2	-	18S	176E
-1973 Jan 13	08:46:29	45773	3619	-49140	-17	N	-a	1.1079	0.8172	-0.1668	229.6	-	-	25N	62E
-1973 Jul 09	16:05:47	45761	3617	-49134	-12	N	-t	-1.1976	0.6968	-0.3750	243.3	-	-	25S	52W
-1972 Jan 03	00:17:16	45749	3615	-49128	-7	T	-p	0.4131	2.0828	1.1167	307.6	192.7	49.1	24N	172W
-1972 Jun 27	16:30:37	45737	3613	-49122	-2	P	-t	-0.4504	2.0637	1.0000	355.4	209.0	-	24S	59W
-1972 Dec 22	15:27:46	45726	3611	-49116	3	T-	p-	-0.2680	2.3629	1.3693	325.0	207.5	81.7	23N	41W
-1971 Jun 16	21:22:15	45714	3609	-49110	8	T	a-	0.3273	2.2650	1.2499	341.4	213.2	73.4	22S	133W
-1971 Dec 12	01:43:20	45702	3607	-49104	13	Nx	h-	-1.0036	1.0423	-0.0087	272.7	-	-	21N	164E
-1970 May 08	02:25:34	45693	3605	-49099	-20	N	-a	-1.4473	0.1745	-0.7701	110.4	-	-	13S	152E
-1970 Jun 06	09:31:58	45691	3605	-49098	18	N	a-	1.0604	0.8930	-0.0688	237.6	-	-	19S	45E
-1970 Nov 01	09:08:52	45681	3603	-49093	-15	N	-t	1.3234	0.4840	-0.6235	209.7	-	-	10N	51E
-1969 Apr 27	19:43:33	45669	3601	-49087	-10	P	-a	-0.7248	1.5005	0.5552	281.9	150.7	-	8S	106W
-1969 Oct 21	09:11:44	45657	3599	-49081	-5	P	-t	0.6299	1.7423	0.6629	336.5	177.8	-	5N	51E
-1968 Apr 16	10:41:36	45646	3597	-49075	0	T+	pp	0.0198	2.8147	1.8283	336.6	220.1	102.0	3S	30E
-1968 Oct 09	15:46:43	45634	3595	-49069	5	T-	p-	-0.0908	2.7018	1.6811	340.7	218.9	98.9	0S	47W
-1967 Apr 05	19:15:56	45622	3593	-49063	10	P	t-	0.8205	1.3739	0.3314	308.0	132.1	-	1N	97W
-1967 Sep 29	05:02:10	45611	3591	-49057	15	P	a-	-0.7648	1.4419	0.4675	280.4	140.1	-	5S	115E
-1966 Feb 24	05:07:55	45601	3590	-49052	-18	N	-t	-1.3027	0.5076	-0.5715	211.8	-	-	14N	118E
-1966 Aug 20	11:08:52	45589	3588	-49046	-13	N	-a	1.2130	0.6212	-0.3566	204.1	-	-	17S	23E
-1966 Sep 18	20:58:07	45587	3587	-49045	25	N	a-	-1.4225	0.2324	-0.7369	127.1	-	-	10S	124W
-1965 Feb 13	08:07:15	45578	3586	-49040	-8	P	-t	-0.5373	1.8928	0.8518	334.1	191.6	-	18N	73E
-1965 Aug 09	22:44:04	45566	3584	-49034	-3	P	-a	0.5293	1.9005	0.8733	329.3	191.1	-	20S	151W
-1964 Feb 02	18:09:02	45554	3582	-49028	2	T+	p-	0.2120	2.4633	1.4745	328.4	211.8	89.6	21N	78W
-1964 Jul 29	03:14:07	45542	3580	-49022	7	T-	pp	-0.2133	2.5028	1.4310	368.3	228.6	92.9	23S	141E
-1963 Jan 22	09:19:57	45531	3578	-49016	12	P	a-	0.8945	1.1975	0.2358	260.4	102.4	-	24N	54E
-1963 Jul 18	03:25:10	45519	3576	-49010	17	P	t-	-0.9516	1.1497	0.0750	298.6	66.9	-	25S	137E
-1963 Dec 13	13:42:57	45509	3574	-49005	-16	N	-a	-1.1245	0.7996	-0.2101	233.2	-	-	21N	16W
-1962 Jun 07	19:39:17	45498	3572	-48999	-11	N	-t	1.0472	0.9354	-0.0623	253.0	-	-	19S	108W
-1962 Dec 02	21:54:01	45486	3570	-48993	-6	P	-a	-0.4684	2.0333	0.9643	345.7	201.3	-	19N	140W
-1961 May 28	09:30:44	45474	3568	-48987	-1	T+	-p	0.2519	2.3709	1.4201	317.5	207.2	85.3	17S	44E

-1961 Nov 21	22:57:38	45463	3566	-48981	4	T+	pp	0.2157	2.5159	1.4095	375.5	229.3	91.3	16N	157W
-1960 May 17	02:42:36	45451	3564	-48975	9	P	a-	-0.4901	1.9288	0.9881	301.2	186.4	-	15S	146E
-1960 Nov 09	22:12:17	45439	3562	-48969	14	P	t-	0.8819	1.2861	0.1945	309.0	104.7	-	13N	146W
-1959 Apr 07	09:22:34	45430	3560	-48964	-19	N	-a	1.3420	0.3973	-0.6062	174.8	-	-	1N	51E
-1959 May 06	18:35:17	45428	3560	-48963	19	N	a-	-1.2660	0.5217	-0.4516	191.4	-	-	12S	92W
-1959 Sep 30	13:43:52	45418	3558	-48958	-14	N	-a	-1.2882	0.4958	-0.5071	188.1	-	-	5S	16W
-1959 Oct 30	02:57:38	45416	3558	-48957	24	N	a-	1.5079	0.1101	-0.9273	95.3	-	-	10N	142E
-1958 Mar 27	15:48:32	45406	3556	-48952	-9	P	-t	0.6250	1.7401	0.6829	337.2	181.5	-	5N	45W
-1958 Sep 20	04:17:01	45395	3554	-48946	-4	P	-a	-0.5759	1.7845	0.8179	296.9	174.3	-	8S	125E
-1957 Mar 16	16:34:15	45383	3552	-48940	1	T-	pp	-0.1236	2.6696	1.5932	374.3	234.1	102.2	8N	56W
-1957 Sep 09	20:12:32	45371	3550	-48934	6	T+	pp	0.1060	2.6507	1.6759	323.3	211.9	96.6	12S	113W
-1956 Mar 04	18:34:49	45360	3548	-48928	11	P	t-	-0.8583	1.3068	0.2600	301.9	117.8	-	12N	85W
-1956 Aug 29	08:50:41	45348	3546	-48922	16	P	h-	0.8465	1.3150	0.2947	289.8	120.3	-	15S	57E
-1955 Jan 23	17:05:55	45338	3545	-48917	-17	N	-a	1.1267	0.7799	-0.1989	224.4	-	-	24N	63W
-1955 Feb 22	03:18:37	45336	3544	-48916	21	N	a-	-1.5329	0.0425	-0.9519	57.7	-	-	15N	144E
-1955 Jul 19	22:46:07	45327	3543	-48911	-12	N	-t	-1.2669	0.5718	-0.5042	223.6	-	-	25S	153W
-1954 Jan 13	08:51:34	45315	3541	-48905	-7	T	-a	0.4289	2.0527	1.0890	306.6	191.3	43.2	24N	59E
-1954 Jul 08	23:09:10	45303	3539	-48899	-2	P	-t	-0.5234	1.9300	0.8656	349.3	199.0	-	24S	160W
-1953 Jan 02	23:59:58	45292	3537	-48893	3	T-	p-	-0.2585	2.3806	1.3868	326.2	208.5	83.3	24N	170W
-1953 Jun 28	04:22:20	45280	3535	-48887	8	T+	p-	0.2539	2.3988	1.3854	343.1	217.5	86.5	23S	121E
-1953 Dec 23	10:00:15	45268	3533	-48881	13	Nx	h-	-1.0002	1.0492	-0.0031	274.3	-	-	22N	39E
-1952 May 18	09:47:06	45259	3531	-48876	-20	Ne	-a	-1.5162	0.0473	-0.8958	58.1	-	-	16S	39E
-1952 Jun 16	16:51:42	45257	3531	-48875	18	P	a-	0.9870	1.0271	0.0665	250.4	56.8	-	21S	67W
-1952 Nov 11	17:09:10	45247	3529	-48870	-15	N	-t	1.3261	0.4793	-0.6285	208.7	-	-	14N	71W
-1951 May 08	03:05:16	45235	3527	-48864	-10	P	-a	-0.7995	1.3638	0.4176	273.6	133.7	-	12S	140E
-1951 Oct 31	17:23:45	45224	3525	-48858	-5	P	-t	0.6306	1.7402	0.6623	335.4	177.3	-	9N	75W
-1950 Apr 27	17:46:25	45212	3523	-48852	0	T-	pp	-0.0560	2.7494	1.7608	337.8	220.5	101.6	8S	79W
-1950 Oct 21	00:18:51	45200	3521	-48846	5	T-	p-	-0.0873	2.7075	1.6882	339.6	218.4	98.8	4N	178W
-1949 Apr 17	01:56:24	45189	3519	-48840	10	P	t-	0.7453	1.5126	0.4687	319.1	154.3	-	3S	160E
-1949 Oct 10	13:43:26	45177	3517	-48834	15	P	a-	-0.7558	1.4587	0.4837	281.1	142.0	-	1S	18W
-1948 Mar 06	12:00:56	45167	3516	-48829	-18	N	-t	-1.3591	0.4017	-0.6726	189.8	-	-	11N	12E
-1948 Apr 05	03:36:43	45165	3515	-48828	20	N	t-	1.5198	0.1058	-0.9665	100.6	-	-	2N	136E
-1948 Aug 30	19:15:48	45156	3514	-48823	-13	N	-a	1.2460	0.5634	-0.4200	196.2	-	-	14S	100W
-1948 Sep 29	05:33:17	45154	3513	-48822	25	N	a-	-1.4119	0.2537	-0.7193	132.8	-	-	6S	105E
-1947 Feb 23	15:31:49	45144	3512	-48817	-8	P	-t	-0.5826	1.8062	0.7720	328.4	184.4	-	15N	40W
-1947 Aug 20	06:18:34	45132	3510	-48811	-3	P	-a	0.5727	1.8244	0.7903	327.5	185.0	-	18S	94E
-1946 Feb 13	02:07:20	45121	3508	-48805	2	T+	p-	0.1752	2.5279	1.5451	327.9	212.9	93.2	19N	161E
-1946 Aug 09	10:15:28	45109	3506	-48799	7	T-	pp	-0.1592	2.6048	1.5276	371.1	231.2	98.6	21S	35E
-1945 Feb 02	17:38:07	45098	3504	-48793	12	P	a-	0.8660	1.2479	0.2896	264.0	112.6	-	22N	72W
-1945 Jul 29	10:15:01	45086	3502	-48787	17	P	t-	-0.8882	1.2669	0.1903	309.2	104.6	-	24S	34E



-1945 Dec 24	22:16:19	45076	3500	-48782	-16	N	-a	-1.1332	0.7841	-0.2266	232.0	-	-	22N	145W
-1944 Jun 18	02:42:06	45065	3498	-48776	-11	N	-h	1.1172	0.8059	-0.1897	237.0	-	-	21S	145E
-1944 Dec 13	06:08:37	45053	3496	-48770	-6	P	-a	-0.4734	2.0249	0.9546	346.4	201.2	-	21N	95E
-1943 Jun 07	16:51:20	45041	3494	-48764	-1	T	-p	0.3257	2.2350	1.2853	313.8	202.3	73.6	20S	68W
-1943 Dec 02	06:58:19	45030	3492	-48758	4	T+	pp	0.2118	2.5228	1.4168	375.8	229.6	91.9	20N	82E
-1942 May 28	10:04:46	45018	3490	-48752	9	T	a-	-0.4152	2.0670	1.1249	306.3	194.1	51.0	18S	34E
-1942 Nov 21	06:21:54	45006	3488	-48746	14	P	h-	0.8785	1.2912	0.2018	308.6	106.3	-	17N	90E
-1941 Apr 18	16:24:35	44997	3487	-48741	-19	N	-h	1.4189	0.2574	-0.7481	143.1	-	-	3S	58W
-1941 May 18	01:43:22	44995	3486	-48740	19	N	h-	-1.1950	0.6534	-0.3230	212.3	-	-	16S	159E
-1941 Oct 11	22:16:08	44985	3485	-48735	-14	N	-a	-1.2929	0.4868	-0.5154	186.1	-	-	0S	147W
-1941 Nov 10	11:29:03	44983	3484	-48734	24	N	a-	1.5027	0.1182	-0.9165	98.3	-	-	14N	12E
-1940 Apr 06	22:27:26	44974	3483	-48729	-9	P	-t	0.7025	1.5979	0.5406	329.6	165.7	-	1N	148W
-1940 Sep 30	12:54:13	44962	3481	-48723	-4	P	-a	-0.5888	1.7617	0.7933	295.7	172.2	-	4S	6W
-1939 Mar 26	23:09:32	44950	3479	-48717	1	T-	pp	-0.0496	2.8037	1.7309	374.6	235.6	105.7	4N	157W
-1939 Sep 20	04:37:44	44939	3477	-48711	6	T+	pp	0.0868	2.6883	1.7088	324.7	212.5	97.4	8S	118E
-1938 Mar 16	01:36:44	44927	3475	-48705	11	P	t-	-0.7939	1.4217	0.3812	309.4	139.6	-	8N	167E
-1938 Sep 09	16:48:47	44916	3473	-48699	16	P	h-	0.8224	1.3626	0.3358	294.8	128.1	-	11S	65W
-1937 Feb 04	01:15:37	44906	3471	-48694	-17	N	-a	1.1543	0.7267	-0.2469	217.1	-	-	22N	173E
-1937 Mar 05	10:55:27	44904	3471	-48693	21	N	a-	-1.4794	0.1376	-0.8505	102.6	-	-	11N	27E
-1937 Jul 31	05:36:14	44894	3469	-48688	-12	N	-t	-1.3279	0.4620	-0.6183	203.5	-	-	24S	103E
-1936 Jan 24	17:17:23	44883	3467	-48682	-7	T	-a	0.4519	2.0092	1.0480	305.1	189.3	32.1	23N	68W
-1936 Jul 19	05:55:46	44871	3465	-48676	-2	P	-t	-0.5905	1.8073	0.7421	342.7	187.9	-	24S	97E
-1935 Jan 13	08:24:38	44859	3463	-48670	3	T-	p-	-0.2431	2.4088	1.4150	327.6	209.9	85.6	23N	64E
-1935 Jul 08	11:28:54	44848	3461	-48664	8	T+	p-	0.1846	2.5254	1.5133	343.9	220.1	94.5	24S	13E
-1934 Jan 02	18:09:32	44836	3459	-48658	13	P	h-	-0.9915	1.0655	0.0126	276.9	26.5	-	23N	84W
-1934 Jun 28	00:15:52	44825	3457	-48652	18	P	a-	0.9164	1.1563	0.1963	261.3	95.5	-	22S	179W
-1934 Nov 23	01:11:07	44815	3456	-48647	-15	N	-t	1.3274	0.4765	-0.6308	208.1	-	-	18N	167E
-1933 May 19	10:24:57	44803	3454	-48641	-10	P	-a	-0.8753	1.2256	0.2778	264.1	111.5	-	16S	28E
-1933 Nov 12	01:39:03	44792	3452	-48635	-5	P	-t	0.6294	1.7413	0.6656	334.5	177.2	-	14N	160E
-1932 May 08	00:47:55	44780	3450	-48629	0	T-	pp	-0.1337	2.6083	1.6168	338.2	219.6	98.3	12S	173E
-1932 Oct 31	08:56:02	44769	3448	-48623	5	T-	p-	-0.0873	2.7066	1.6891	338.4	217.8	98.6	9N	51E
-1931 Apr 27	08:30:23	44757	3446	-48617	10	P	t-	0.6654	1.6599	0.6145	329.5	173.0	-	7S	59E
-1931 Oct 20	22:30:24	44746	3444	-48611	15	P	a-	-0.7513	1.4671	0.4916	281.3	142.8	-	4N	152W
-1930 Mar 17	18:46:39	44736	3442	-48606	-18	N	-t	-1.4214	0.2850	-0.7846	161.2	-	-	7N	92W
-1930 Apr 16	09:59:59	44734	3442	-48605	20	N	t-	1.4404	0.2506	-0.8198	152.7	-	-	2S	37E
-1930 Sep 11	03:29:45	44724	3440	-48600	-13	N	-a	1.2728	0.5170	-0.4719	189.5	-	-	10S	134E
-1930 Oct 10	14:13:40	44722	3440	-48599	25	N	a-	-1.4060	0.2662	-0.7101	136.2	-	-	1S	28W
-1929 Mar 06	22:50:04	44713	3438	-48594	-8	P	-t	-0.6339	1.7088	0.6812	321.7	175.3	-	11N	152W
-1929 Aug 31	14:01:08	44701	3436	-48588	-3	P	-a	0.6084	1.7622	0.7215	326.0	179.4	-	14S	23W
-1928 Feb 24	09:59:26	44689	3434	-48582	2	T+	p-	0.1326	2.6031	1.6261	327.4	213.9	96.3	16N	41E

-1928 Aug 19	17:24:23	44678	3432	-48576	7	T-	pp	-0.1118	2.6944	1.6120	373.2	233.0	102.1	18S	74W
-1927 Feb 13	01:48:39	44666	3431	-48570	12	P	a-	0.8314	1.3098	0.3548	268.3	123.4	-	19N	164E
-1927 Aug 08	17:14:40	44655	3429	-48564	17	P	t-	-0.8324	1.3703	0.2917	317.6	127.4	-	22S	72W
-1926 Jan 04	06:41:01	44645	3427	-48559	-16	N	-a	-1.1485	0.7563	-0.2549	229.2	-	-	23N	88E
-1926 Feb 02	17:47:30	44643	3427	-48558	22	N	a-	1.5409	0.0195	-0.9582	38.2	-	-	23N	76W
-1926 Jun 29	09:52:11	44634	3425	-48553	-11	N	-h	1.1820	0.6862	-0.3078	220.5	-	-	22S	36E
-1926 Jul 28	21:01:21	44632	3425	-48552	27	N	h-	-1.5165	0.0908	-0.9396	88.0	-	-	24S	129W
-1926 Dec 24	14:15:33	44622	3423	-48547	-6	P	-h	-0.4836	2.0065	0.9355	346.6	200.4	-	23N	27W
-1925 Jun 19	00:16:45	44610	3421	-48541	-1	T	-p	0.3960	2.1059	1.1565	309.7	196.5	56.8	22S	179E
-1925 Dec 13	14:54:19	44599	3419	-48535	4	T+	pp	0.2044	2.5358	1.4309	376.1	230.1	92.9	22N	38W
-1924 Jun 07	17:28:31	44587	3417	-48529	9	T	p-	-0.3419	2.2025	1.2584	310.7	200.2	70.4	21S	79W
-1924 Dec 01	14:31:30	44576	3415	-48523	14	P	h-	0.8745	1.2969	0.2107	308.2	108.2	-	20N	34W
-1923 Apr 28	23:18:30	44566	3414	-48518	-19	Ne	-h	1.5007	0.1085	-0.8995	94.6	-	-	7S	164W
-1923 May 28	08:47:45	44564	3413	-48517	19	N	h-	-1.1220	0.7894	-0.1908	231.1	-	-	19S	51E
-1923 Oct 22	06:55:41	44555	3412	-48512	-14	N	-a	-1.2925	0.4870	-0.5142	185.6	-	-	4N	81E
-1923 Nov 20	20:03:43	44553	3411	-48511	24	N	a-	1.4996	0.1224	-0.9091	99.6	-	-	17N	118W
-1922 Apr 18	04:57:28	44543	3410	-48506	-9	P	-t	0.7859	1.4451	0.3872	319.9	143.9	-	3S	112E
-1922 Oct 11	21:38:19	44531	3408	-48500	-4	P	-a	-0.5962	1.7489	0.7790	295.1	171.0	-	0N	140W
-1921 Apr 07	05:38:23	44520	3406	-48494	1	T+	pp	0.0298	2.8383	1.7687	374.0	235.7	106.2	0N	103E
-1921 Oct 01	13:10:06	44508	3404	-48488	6	T+	pp	0.0743	2.7136	1.7296	325.9	213.0	97.9	3S	12W
-1920 Mar 26	08:34:20	44497	3402	-48482	11	P	t-	-0.7249	1.5453	0.5108	316.4	157.9	-	4N	59E
-1920 Sep 20	00:52:52	44485	3400	-48476	16	P	h-	0.8040	1.3995	0.3664	298.9	133.5	-	7S	172E
-1919 Feb 14	09:19:45	44476	3398	-48471	-17	N	-a	1.1870	0.6641	-0.3042	208.2	-	-	19N	51E
-1919 Mar 15	18:27:32	44474	3398	-48470	21	N	a-	-1.4211	0.2414	-0.7407	134.0	-	-	7N	88W
-1919 Aug 10	12:33:25	44464	3396	-48465	-12	N	-t	-1.3827	0.3636	-0.7211	182.5	-	-	22S	2W
-1919 Sep 09	05:35:30	44462	3396	-48464	26	N	t-	1.5636	0.0303	-1.0515	53.6	-	-	11S	101E
-1918 Feb 04	01:35:03	44452	3394	-48459	-7	P	-a	0.4817	1.9533	0.9945	303.1	186.3	-	21N	166E
-1918 Jul 30	12:52:14	44441	3392	-48453	-2	P	-t	-0.6501	1.6986	0.6325	336.1	176.3	-	23S	8W
-1917 Jan 24	16:40:38	44429	3390	-48447	3	T-	p-	-0.2211	2.4490	1.4555	329.2	211.6	88.5	22N	61W
-1917 Jul 19	18:45:00	44418	3388	-48441	8	T+	pp	0.1223	2.6393	1.6280	344.0	221.5	99.1	24S	97W
-1916 Jan 14	02:09:45	44406	3387	-48435	13	P	t-	-0.9762	1.0936	0.0405	280.5	47.5	-	23N	155E
-1916 Jul 08	07:47:31	44395	3385	-48429	18	P	a-	0.8514	1.2756	0.3157	270.2	118.8	-	23S	67E
-1916 Dec 03	09:10:29	44385	3383	-48424	-15	N	-t	1.3307	0.4698	-0.6361	206.6	-	-	21N	46E
-1915 May 29	17:43:48	44374	3381	-48418	-10	P	-a	-0.9511	1.0876	0.1375	253.2	80.1	-	19S	84W
-1915 Nov 22	09:55:32	44362	3379	-48412	-5	P	-t	0.6279	1.7425	0.6698	333.4	177.2	-	17N	34E
-1914 May 19	07:46:03	44351	3377	-48406	0	T-	-p	-0.2133	2.4642	1.4691	337.9	217.2	91.5	15S	66E
-1914 Nov 11	17:35:19	44339	3375	-48400	5	T-	p-	-0.0883	2.7035	1.6886	337.2	217.3	98.4	13N	81W
-1913 May 08	15:00:15	44328	3373	-48394	10	P	t-	0.5828	1.8126	0.7650	339.0	188.8	-	11S	42W
-1913 Nov 01	07:21:26	44316	3371	-48388	15	P	a-	-0.7499	1.4696	0.4942	281.2	143.0	-	8N	73E
-1912 Mar 28	01:25:19	44306	3370	-48383	-18	N	-t	-1.4891	0.1586	-0.9065	121.3	-	-	3N	166E

-1912 Apr 26	16:18:41	44304	3369	-48382	20	N	t-	1.3568	0.4033	-0.6656	190.9	-	-	6S	60W
-1912 Sep 21	11:51:00	44295	3368	-48377	-13	N	-a	1.2931	0.4825	-0.5118	184.3	-	-	6S	7E
-1912 Oct 20	22:59:21	44293	3367	-48376	25	N	a-	-1.4049	0.2698	-0.7096	137.4	-	-	3N	161W
-1911 Mar 17	06:01:18	44283	3366	-48371	-8	P	-t	-0.6917	1.5994	0.5783	313.8	163.8	-	7N	98E
-1911 Sep 10	21:51:30	44272	3364	-48365	-3	P	-a	0.6365	1.7140	0.6667	325.0	174.5	-	11S	143W
-1910 Mar 06	17:42:27	44260	3362	-48359	2	T+	pp	0.0819	2.6933	1.7219	326.7	214.7	98.8	12N	77W
-1910 Aug 31	00:43:13	44249	3360	-48353	7	T-	pp	-0.0732	2.7678	1.6803	374.9	234.0	103.9	15S	174E
-1909 Feb 24	09:50:56	44237	3358	-48347	12	P	a-	0.7902	1.3837	0.4318	273.2	134.6	-	16N	42E
-1909 Aug 20	00:24:16	44226	3356	-48341	17	P	t-	-0.7841	1.4599	0.3793	324.2	143.2	-	19S	179E
-1908 Jan 15	14:58:30	44216	3354	-48336	-16	N	-a	-1.1688	0.7193	-0.2923	225.0	-	-	22N	37W
-1908 Feb 14	01:51:36	44214	3354	-48335	22	N	a-	1.5117	0.0727	-0.9043	73.6	-	-	20N	162E
-1908 Jul 09	17:09:01	44205	3352	-48330	-11	N	-h	1.2419	0.5757	-0.4172	203.4	-	-	23S	74W
-1908 Aug 08	04:25:46	44203	3352	-48329	27	N	h-	-1.4627	0.1894	-0.8408	125.5	-	-	22S	118E
-1907 Jan 03	22:16:15	44193	3351	-48324	-6	P	-h	-0.4982	1.9797	0.9085	346.5	199.0	-	23N	148W
-1907 Jun 29	07:45:29	44182	3349	-48318	-1	T	-a	0.4637	1.9817	1.0321	305.1	189.7	26.7	23S	66E
-1907 Dec 23	22:46:08	44170	3347	-48312	4	T+	pp	0.1937	2.5545	1.4515	376.2	230.8	94.4	23N	157W
-1906 Jun 19	00:54:33	44159	3345	-48306	9	T-	p-	-0.2710	2.3339	1.3872	314.3	205.0	82.5	23S	168E
-1906 Dec 12	22:37:45	44147	3343	-48300	14	P	h-	0.8673	1.3082	0.2259	308.2	111.5	-	22N	156W
-1905 Jun 08	15:53:59	44136	3341	-48294	19	N	h-	-1.0511	0.9215	-0.0630	247.4	-	-	21S	58W
-1905 Nov 02	15:38:31	44126	3339	-48289	-14	N	-a	-1.2899	0.4910	-0.5085	185.7	-	-	8N	52W
-1905 Dec 02	04:37:12	44124	3339	-48288	24	N	a-	1.4952	0.1285	-0.8992	101.6	-	-	21N	113E
-1904 Apr 28	11:23:34	44114	3337	-48283	-9	P	-t	0.8717	1.2881	0.2294	308.1	113.7	-	7S	13E
-1904 Oct 22	06:26:21	44103	3335	-48277	-4	P	-a	-0.6004	1.7416	0.7706	294.7	170.2	-	5N	86E
-1903 Apr 17	12:02:39	44092	3333	-48271	1	T+	pp	0.1132	2.6838	1.6172	372.3	234.1	103.1	4S	4E
-1903 Oct 11	21:47:43	44080	3331	-48265	6	T+	pp	0.0663	2.7303	1.7421	327.0	213.4	98.1	1N	144W
-1902 Apr 06	15:25:33	44069	3330	-48259	11	P	t-	-0.6493	1.6812	0.6523	323.1	173.9	-	0S	46W
-1902 Oct 01	09:04:16	44057	3328	-48253	16	P	h-	0.7922	1.4240	0.3851	302.1	136.9	-	3S	47E
-1901 Feb 25	17:14:47	44047	3326	-48248	-17	N	-a	1.2278	0.5866	-0.3767	196.6	-	-	16N	70W
-1901 Mar 27	01:53:03	44045	3326	-48247	21	N	a-	-1.3565	0.3573	-0.6193	160.6	-	-	3N	157E
-1901 Aug 21	19:40:31	44036	3324	-48242	-12	N	-t	-1.4292	0.2804	-0.8085	161.8	-	-	19S	110W
-1901 Sep 20	13:14:40	44034	3324	-48241	26	N	t-	1.5420	0.0725	-1.0145	82.8	-	-	7S	16W
-1900 Feb 15	09:43:46	44024	3322	-48236	-7	P	-a	0.5190	1.8837	0.9273	300.5	182.3	-	19N	43E
-1900 Aug 09	19:59:05	44013	3320	-48230	-2	P	-t	-0.7018	1.6042	0.5370	329.7	164.6	-	21S	116W

## 19TH CENTURY BCE

**In the 19th century BCE the total number of lunar eclipses was 255 lunar eclipses:  
98 penumbral lunar eclipses, 97 partial lunar eclipses, 60 total lunar eclipses  
(49 central total lunar eclipses, 11 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-1899 Feb 04	00:46:37	44001	3318	-48224	3	T-	p-	-0.1915	2.5031	1.5099	331.0	213.6	91.9	20N	176E
-1899 Jul 30	02:09:33	43990	3316	-48218	8	T+	pp	0.0660	2.7424	1.7315	343.5	221.9	101.3	22S	151E
-1898 Jan 24	10:00:25	43978	3314	-48212	13	P	t-	-0.9539	1.1344	0.0814	285.3	67.2	-	22N	37E
-1898 Jul 19	15:26:03	43967	3312	-48206	18	P	a-	0.7915	1.3857	0.4253	277.4	135.4	-	23S	49W
-1898 Dec 14	17:06:51	43957	3311	-48201	-15	N	-t	1.3365	0.4581	-0.6456	204.0	-	-	23N	74W
-1897 Jun 10	01:04:03	43946	3309	-48195	-10	N	-a	-1.0253	0.9531	-0.0000	241.2	-	-	22S	164E
-1897 Jul 09	08:14:26	43944	3309	-48194	28	N	a-	1.4842	0.1078	-0.8389	87.0	-	-	22S	58E
-1897 Dec 03	18:12:41	43935	3307	-48189	-5	P	-t	0.6268	1.7427	0.6737	332.2	177.1	-	20N	92W
-1896 May 29	14:42:29	43923	3305	-48183	0	T	-a	-0.2931	2.3197	1.3205	336.6	213.4	80.2	18S	40W
-1896 Nov 22	02:16:40	43912	3303	-48177	5	T-	p-	-0.0903	2.6983	1.6863	335.9	216.7	98.2	17N	147E
-1895 May 18	21:27:22	43900	3301	-48171	10	P	t-	0.4983	1.9690	0.9188	347.4	201.8	-	15S	141W
-1895 Nov 11	16:14:44	43889	3299	-48165	15	P	a-	-0.7505	1.4682	0.4933	280.8	142.7	-	12N	63W
-1894 Apr 08	07:58:34	43879	3298	-48160	-18	Ne	-t	-1.5609	0.0247	-1.0361	48.3	-	-	2S	64E
-1894 May 07	22:35:03	43877	3297	-48159	20	N	t-	1.2706	0.5607	-0.5069	221.7	-	-	10S	157W
-1894 Oct 02	20:18:34	43868	3296	-48154	-13	N	-a	1.3077	0.4583	-0.5410	180.7	-	-	2S	123W
-1894 Nov 01	07:47:53	43866	3295	-48153	25	N	a-	-1.4066	0.2681	-0.7139	137.2	-	-	8N	64E
-1893 Mar 28	13:08:19	43856	3294	-48148	-8	P	-t	-0.7537	1.4827	0.4677	304.9	149.4	-	3N	12W
-1893 Sep 22	05:47:51	43845	3292	-48142	-3	P	-a	0.6587	1.6764	0.6229	324.5	170.4	-	6S	96E
-1892 Mar 17	01:20:37	43833	3290	-48136	2	T+	pp	0.0265	2.7923	1.8261	325.8	214.9	100.2	8N	166E
-1892 Sep 10	08:10:11	43822	3288	-48130	7	T-	pp	-0.0417	2.8279	1.7357	376.2	234.6	104.8	11S	61E
-1891 Mar 06	17:44:21	43810	3286	-48124	12	P	a-	0.7417	1.4714	0.5222	278.7	146.0	-	13N	79W
-1891 Aug 30	07:44:27	43799	3284	-48118	17	P	t-	-0.7438	1.5348	0.4524	329.1	154.3	-	16S	67E
-1890 Jan 25	23:05:26	43789	3283	-48113	-16	N	-a	-1.1970	0.6676	-0.3440	218.6	-	-	21N	160W
-1890 Feb 24	09:44:42	43787	3282	-48112	22	N	a-	1.4745	0.1407	-0.8358	102.0	-	-	17N	42E
-1890 Jul 21	00:35:25	43778	3281	-48107	-11	N	-a	1.2949	0.4782	-0.5141	186.5	-	-	22S	173E
-1890 Aug 19	12:01:59	43776	3280	-48106	27	N	a-	-1.4173	0.2727	-0.7575	149.0	-	-	20S	3E
-1889 Jan 15	06:05:57	43766	3279	-48101	-6	P	-t	-0.5210	1.9377	0.8668	345.5	196.3	-	23N	94E
-1889 Jul 10	15:21:55	43755	3277	-48095	-1	P	-a	0.5253	1.8691	0.9186	300.4	182.4	-	23S	49W

-1888 Jan 04	06:30:43	43743	3275	-48089	4	T+	pp	0.1773	2.5833	1.4828	376.4	231.6	96.3	24N	86E
-1888 Jun 29	08:23:31	43732	3273	-48083	9	T-	p-	-0.2029	2.4604	1.5104	317.3	208.5	90.4	24S	54E
-1888 Dec 23	06:41:09	43720	3271	-48077	14	P	h-	0.8571	1.3246	0.2469	308.4	116.0	-	24N	82E
-1887 Jun 18	23:00:09	43709	3269	-48071	19	P	h-	-0.9812	1.0522	0.0628	261.9	56.8	-	23S	166W
-1887 Nov 13	00:24:51	43700	3268	-48066	-14	N	-a	-1.2855	0.4980	-0.4995	186.4	-	-	12N	174E
-1887 Dec 12	13:09:14	43698	3267	-48065	24	N	a-	1.4889	0.1378	-0.8854	104.8	-	-	23N	16W
-1886 May 09	17:44:05	43688	3266	-48060	-9	P	-t	0.9611	1.1248	0.0647	293.8	61.9	-	11S	85W
-1886 Nov 02	15:18:57	43677	3264	-48054	-4	P	-a	-0.6012	1.7406	0.7688	294.7	170.0	-	9N	49W
-1885 Apr 28	18:24:01	43665	3262	-48048	1	T+	pp	0.1996	2.5240	1.4600	369.5	230.6	95.5	8S	95W
-1885 Oct 23	06:29:22	43654	3260	-48042	6	T+	pp	0.0622	2.7397	1.7478	328.1	213.8	98.3	6N	83E
-1884 Apr 16	22:15:12	43642	3258	-48036	11	P	h-	-0.5712	1.8219	0.7983	328.9	187.1	-	4S	152W
-1884 Oct 11	17:20:41	43631	3256	-48030	16	P	h-	0.7853	1.4395	0.3951	304.5	138.9	-	2N	80W
-1883 Mar 08	01:03:06	43621	3254	-48025	-17	N	-a	1.2746	0.4983	-0.4602	182.2	-	-	12N	171E
-1883 Apr 06	09:13:54	43619	3254	-48024	21	N	a-	-1.2870	0.4821	-0.4894	183.6	-	-	1S	44E
-1883 Sep 01	02:56:05	43610	3253	-48019	-12	N	-t	-1.4686	0.2102	-0.8827	141.1	-	-	16S	139E
-1883 Sep 30	21:00:44	43608	3252	-48018	26	N	t-	1.5262	0.1040	-0.9877	99.2	-	-	2S	135W
-1882 Feb 25	17:44:24	43598	3251	-48013	-7	P	-a	0.5629	1.8021	0.8478	297.2	176.9	-	15N	79W
-1882 Aug 21	03:16:47	43587	3249	-48007	-2	P	-t	-0.7453	1.5249	0.4567	323.8	153.4	-	19S	134E
-1881 Feb 15	08:42:51	43576	3247	-48001	3	T-	pp	-0.1545	2.5709	1.5778	332.9	215.6	95.3	18N	56E
-1881 Aug 10	09:45:18	43564	3245	-47995	8	T+	pp	0.0179	2.8304	1.8198	342.6	221.6	101.9	21S	36E
-1880 Feb 04	17:40:59	43553	3243	-47989	13	P	t-	-0.9242	1.1889	0.1361	291.2	86.5	-	20N	79W
-1880 Jul 29	23:12:27	43541	3241	-47983	18	P	a-	0.7376	1.4851	0.5239	283.4	147.7	-	22S	167W
-1880 Dec 25	00:57:55	43532	3239	-47978	-15	N	-t	1.3466	0.4381	-0.6627	199.6	-	-	25N	168E
-1879 Jun 20	08:26:34	43520	3238	-47972	-10	N	-a	-1.0972	0.8231	-0.1337	227.9	-	-	24S	52E
-1879 Jul 19	15:56:57	43518	3237	-47971	28	N	a-	1.4297	0.2096	-0.7405	120.3	-	-	22S	59W
-1879 Dec 14	02:25:59	43509	3236	-47966	-5	P	-t	0.6296	1.7354	0.6709	330.5	176.4	-	23N	144E
-1878 Jun 09	21:38:58	43498	3234	-47960	0	T	-a	-0.3719	2.1776	1.1737	334.5	207.9	62.3	21S	146W
-1878 Dec 03	10:56:49	43486	3232	-47954	5	T-	p-	-0.0904	2.6963	1.6879	334.7	216.2	98.1	20N	16E
-1877 May 30	03:53:29	43475	3230	-47948	10	T	t-	0.4136	2.1258	1.0726	354.6	212.4	43.3	18S	120E
-1877 Nov 23	01:08:00	43463	3228	-47942	15	P	a-	-0.7510	1.4669	0.4929	280.4	142.6	-	16N	162E
-1876 May 18	04:50:17	43452	3226	-47936	20	N	t-	1.1827	0.7217	-0.3451	247.4	-	-	14S	106E
-1876 Oct 13	04:52:01	43442	3224	-47931	-13	N	-a	1.3170	0.4437	-0.5605	178.7	-	-	3N	106E
-1876 Nov 11	16:38:48	43440	3224	-47930	25	N	a-	-1.4108	0.2613	-0.7228	135.9	-	-	12N	70W
-1875 Apr 07	20:08:46	43431	3223	-47925	-8	P	-t	-0.8219	1.3546	0.3454	294.3	130.3	-	1S	120W
-1875 Oct 02	13:51:39	43420	3221	-47919	-3	P	-a	0.6738	1.6515	0.5922	324.5	167.5	-	2S	28W
-1874 Mar 28	08:51:35	43408	3219	-47913	2	T-	pp	-0.0357	2.7729	1.8116	324.5	214.5	100.0	4N	51E
-1874 Sep 21	15:45:56	43397	3217	-47907	7	T-	pp	-0.0177	2.8741	1.7777	377.2	234.9	105.1	7S	56W
-1873 Mar 18	01:30:44	43385	3215	-47901	12	P	a-	0.6875	1.5698	0.6230	284.4	157.1	-	8N	162E
-1873 Sep 10	15:15:25	43374	3213	-47895	17	P	t-	-0.7115	1.5948	0.5109	332.7	162.2	-	12S	47W
-1872 Feb 06	07:04:22	43364	3211	-47890	-16	N	-a	-1.2308	0.6056	-0.4060	210.2	-	-	19N	79E

-1872 Mar 06	17:30:14	43362	3211	-47889	22	N	a-	1.4320	0.2185	-0.7577	126.5	-	-	13N	77W
-1872 Jul 31	08:09:12	43353	3210	-47884	-11	N	-a	1.3426	0.3905	-0.6015	169.4	-	-	21S	58E
-1872 Aug 29	19:47:11	43351	3209	-47883	27	N	a-	-1.3782	0.3445	-0.6857	165.8	-	-	16S	115W
-1871 Jan 25	13:47:59	43342	3208	-47878	-6	P	-t	-0.5492	1.8856	0.8154	343.9	192.7	-	22N	22W
-1871 Jul 20	23:04:16	43330	3206	-47872	-1	P	-a	0.5821	1.7656	0.8139	295.7	174.5	-	23S	166W
-1870 Jan 14	14:07:19	43319	3204	-47866	4	T+	pp	0.1545	2.6236	1.5263	376.6	232.6	98.7	24N	28W
-1870 Jul 10	15:57:53	43307	3202	-47860	9	T-	pp	-0.1400	2.5778	1.6240	319.6	210.9	95.4	24S	60W
-1869 Jan 03	14:38:48	43296	3200	-47854	14	P	h-	0.8419	1.3499	0.2774	309.3	122.1	-	25N	38W
-1869 Jun 30	06:10:14	43285	3198	-47848	19	P	h-	-0.9152	1.1761	0.1813	274.5	95.2	-	24S	86E
-1869 Nov 24	09:10:21	43275	3197	-47843	-14	N	-a	-1.2823	0.5026	-0.4924	186.6	-	-	16N	41E
-1869 Dec 23	21:36:41	43273	3196	-47842	24	N	a-	1.4785	0.1545	-0.8638	110.3	-	-	25N	144W
-1868 May 20	00:04:23	43264	3195	-47837	-9	N	-t	1.0496	0.9632	-0.0985	277.1	-	-	15S	177E
-1868 Nov 13	00:12:36	43252	3193	-47831	-4	P	-a	-0.6012	1.7408	0.7687	294.7	170.0	-	13N	175E
-1867 May 09	00:42:49	43241	3191	-47825	1	T	pp	0.2883	2.3600	1.2983	365.4	225.0	81.8	12S	168E
-1867 Nov 02	15:14:07	43230	3189	-47819	6	T+	pp	0.0613	2.7431	1.7480	329.2	214.2	98.4	10N	50W
-1866 Apr 28	05:02:02	43218	3187	-47813	11	P	h-	-0.4897	1.9690	0.9502	333.8	198.0	-	8S	104E
-1866 Oct 23	01:41:07	43207	3185	-47807	16	P	h-	0.7826	1.4469	0.3977	306.3	139.7	-	6N	153E
-1865 Mar 19	08:43:59	43197	3184	-47802	-17	N	-a	1.3278	0.3986	-0.5556	164.1	-	-	9N	53E
-1865 Apr 17	16:31:19	43195	3183	-47801	21	N	a-	-1.2140	0.6138	-0.3532	203.8	-	-	5S	68W
-1865 Sep 12	10:22:40	43186	3182	-47796	-12	N	-t	-1.4988	0.1567	-0.9399	122.6	-	-	12S	25E
-1865 Oct 12	04:54:16	43184	3181	-47795	26	N	t-	1.5168	0.1233	-0.9725	108.1	-	-	2N	105E
-1864 Mar 08	01:36:27	43174	3180	-47790	-7	P	-a	0.6138	1.7078	0.7553	293.0	169.8	-	12N	160E
-1864 Aug 31	10:45:02	43163	3178	-47784	-2	P	-t	-0.7808	1.4602	0.3911	318.6	143.0	-	15S	20E
-1863 Feb 25	16:29:06	43152	3176	-47778	3	T-	pp	-0.1101	2.6525	1.6595	334.8	217.5	98.4	15N	63W
-1863 Aug 20	17:31:14	43140	3174	-47772	8	T-	pp	-0.0227	2.8217	1.8111	341.4	220.9	101.6	18S	82W
-1862 Feb 15	01:09:51	43129	3172	-47766	13	P	t-	-0.8856	1.2594	0.2071	298.2	105.9	-	17N	167E
-1862 Aug 10	07:07:59	43118	3170	-47760	18	P	a-	0.6908	1.5716	0.6091	288.0	156.9	-	20S	73E
-1861 Jan 05	08:43:25	43108	3169	-47755	-15	N	-t	1.3614	0.4091	-0.6880	193.0	-	-	25N	51E
-1861 Jul 01	15:52:09	43097	3167	-47749	-10	N	-a	-1.1657	0.6994	-0.2616	213.4	-	-	25S	60W
-1861 Jul 30	23:45:31	43095	3167	-47748	28	N	a-	1.3804	0.3019	-0.6519	143.4	-	-	21S	177W
-1861 Dec 25	10:36:38	43085	3165	-47743	-5	P	-t	0.6352	1.7225	0.6630	328.4	175.1	-	24N	21E
-1860 Jun 20	04:36:43	43074	3163	-47737	0	T	-a	-0.4485	2.0395	1.0305	331.7	200.9	27.4	23S	108E
-1860 Dec 13	19:35:24	43063	3161	-47731	5	T-	p-	-0.0889	2.6971	1.6928	333.4	215.8	98.1	22N	115W
-1859 Jun 09	10:18:59	43051	3159	-47725	10	T	tp	0.3291	2.2828	1.2261	360.6	220.7	72.7	20S	22E
-1859 Dec 03	10:00:27	43040	3157	-47719	15	P	a-	-0.7508	1.4664	0.4939	280.1	142.6	-	19N	28E
-1858 May 29	11:07:15	43029	3155	-47713	20	N	t-	1.0953	0.8817	-0.1848	268.8	-	-	17S	10E
-1858 Oct 24	13:28:26	43019	3154	-47708	-13	N	-a	1.3233	0.4342	-0.5742	177.6	-	-	7N	25W
-1858 Nov 23	01:28:16	43017	3154	-47707	25	N	a-	-1.4145	0.2554	-0.7303	134.7	-	-	15N	156E
-1857 Apr 19	03:08:13	43008	3152	-47702	-8	P	-t	-0.8916	1.2240	0.2200	282.5	105.6	-	5S	132E
-1857 Oct 13	22:00:20	42996	3150	-47696	-3	P	-a	0.6843	1.6349	0.5704	324.8	165.4	-	2N	152W

-1856 Apr 07	16:18:51	42985	3148	-47690	2	T-	pp	-0.1016	2.6500	1.6929	322.7	213.2	98.0	1S	64W
-1856 Oct 01	23:28:41	42974	3146	-47684	7	T+	pp	0.0002	2.9081	1.8079	378.0	235.0	105.0	3S	174W
-1855 Mar 28	09:10:03	42962	3144	-47678	12	P	a-	0.6273	1.6791	0.7342	290.2	167.6	-	4N	44E
-1855 Sep 20	22:56:35	42951	3143	-47672	17	P	t-	-0.6872	1.6400	0.5550	335.0	167.5	-	8S	165W
-1854 Feb 16	14:50:37	42942	3141	-47667	-16	N	-a	-1.2738	0.5268	-0.4849	198.2	-	-	16N	39W
-1854 Mar 18	01:04:45	42940	3141	-47666	22	N	a-	1.3816	0.3110	-0.6654	150.1	-	-	9N	167E
-1854 Aug 11	15:54:29	42930	3139	-47661	-11	N	-a	1.3817	0.3188	-0.6732	153.6	-	-	19S	59W
-1854 Sep 10	03:44:31	42928	3139	-47660	27	N	a-	-1.3481	0.3996	-0.6304	177.1	-	-	13S	124E
-1853 Feb 05	21:17:58	42919	3137	-47655	-6	P	-t	-0.5861	1.8175	0.7482	341.3	187.2	-	20N	136W
-1853 Aug 01	06:54:49	42908	3135	-47649	-1	P	-a	0.6322	1.6746	0.7211	291.1	166.6	-	22S	75E
-1852 Jan 25	21:34:55	42896	3133	-47643	4	T+	pp	0.1244	2.6770	1.5833	376.7	233.7	101.3	22N	141W
-1852 Jul 20	23:37:40	42885	3132	-47637	9	T-	pp	-0.0822	2.6860	1.7278	321.4	212.4	98.2	24S	176W
-1851 Jan 13	22:30:03	42874	3130	-47631	14	P	h-	0.8204	1.3864	0.3196	310.9	129.9	-	24N	156W
-1851 Jul 10	13:22:47	42862	3128	-47625	19	P	h-	-0.8520	1.2951	0.2943	285.6	119.8	-	25S	23W
-1851 Dec 04	17:56:25	42853	3126	-47620	-14	N	-a	-1.2794	0.5063	-0.4855	186.7	-	-	19N	91W
-1850 Jan 03	06:00:08	42851	3126	-47619	24	N	a-	1.4641	0.1781	-0.8347	117.7	-	-	25N	90E
-1850 May 31	06:23:10	42841	3124	-47614	-9	N	-t	1.1384	0.8014	-0.2624	257.5	-	-	18S	80E
-1850 Nov 24	09:06:47	42830	3122	-47608	-4	P	-a	-0.6009	1.7412	0.7693	294.7	170.1	-	17N	40E
-1849 May 20	07:02:43	42819	3121	-47602	1	T	-t	0.3765	2.1973	1.1374	360.1	217.3	58.7	15S	71E
-1849 Nov 14	00:00:49	42807	3119	-47596	6	T+	pp	0.0626	2.7420	1.7441	330.2	214.6	98.5	14N	176E
-1848 May 08	11:48:56	42796	3117	-47590	11	T	h-	-0.4070	2.1186	1.1041	337.7	206.7	49.8	12S	1W
-1848 Nov 02	10:04:38	42785	3115	-47584	16	P	h-	0.7830	1.4482	0.3947	307.7	139.7	-	11N	25E
-1847 Mar 29	16:19:57	42775	3113	-47579	-17	N	-a	1.3854	0.2909	-0.6594	141.3	-	-	4N	64W
-1847 Apr 27	23:46:48	42774	3113	-47578	21	N	a-	-1.1385	0.7503	-0.2127	221.4	-	-	9S	180W
-1847 Sep 22	17:57:23	42764	3112	-47573	-12	N	-t	-1.5226	0.1146	-0.9852	105.3	-	-	8S	90W
-1847 Oct 22	12:52:07	42762	3111	-47572	26	N	t-	1.5106	0.1363	-0.9628	113.8	-	-	7N	17W
-1846 Mar 19	09:20:31	42753	3110	-47567	-7	P	-a	0.6714	1.6015	0.6504	287.8	160.5	-	8N	42E
-1846 Sep 11	18:24:20	42741	3108	-47561	-2	P	-t	-0.8083	1.4101	0.3403	314.1	134.1	-	12S	97W
-1845 Mar 09	00:06:26	42730	3106	-47555	3	T-	pp	-0.0586	2.7470	1.7537	336.5	219.2	100.8	11N	179W
-1845 Sep 01	01:26:49	42719	3104	-47549	8	T-	pp	-0.0564	2.7598	1.7493	340.1	219.9	100.6	15S	157E
-1844 Feb 26	08:28:31	42707	3102	-47543	13	P	t-	-0.8393	1.3442	0.2923	306.1	124.6	-	14N	55E
-1844 Aug 20	15:12:03	42696	3100	-47537	18	P	a-	0.6504	1.6463	0.6824	291.7	163.8	-	17S	50W
-1843 Jan 15	16:20:06	42687	3099	-47532	-15	N	-t	1.3832	0.3668	-0.7260	183.1	-	-	25N	64W
-1843 Jul 11	23:22:07	42675	3097	-47526	-10	N	-a	-1.2301	0.5838	-0.3820	197.9	-	-	25S	174W
-1843 Aug 10	07:41:49	42673	3097	-47525	28	N	a-	1.3375	0.3827	-0.5752	160.5	-	-	19S	62E
-1842 Jan 04	18:40:54	42664	3095	-47520	-5	P	-t	0.6471	1.6979	0.6441	325.6	172.6	-	25N	100W
-1842 Jul 01	11:37:49	42653	3093	-47514	0	P	-a	-0.5213	1.9089	0.8941	328.1	192.5	-	24S	1E
-1842 Dec 25	04:08:40	42641	3091	-47508	5	T-	p-	-0.0820	2.7074	1.7078	332.1	215.5	98.3	23N	116E
-1841 Jun 20	16:47:47	42630	3089	-47502	10	T+	pp	0.2475	2.4343	1.3738	365.4	226.8	88.7	22S	77W
-1841 Dec 14	18:50:25	42619	3087	-47496	15	P	a-	-0.7484	1.4701	0.4994	280.1	143.2	-	21N	105W

-1840 Jun 08	17:25:30	42607	3086	-47490	20	Nx	t-	1.0081	1.0419	-0.0246	287.1	-	-	20S	86W
-1840 Nov 03	22:08:42	42598	3084	-47485	-13	N	-a	1.3262	0.4309	-0.5813	177.6	-	-	12N	157W
-1840 Dec 03	10:17:29	42596	3084	-47484	25	N	a-	-1.4185	0.2488	-0.7381	133.3	-	-	18N	22E
-1839 Apr 29	10:04:27	42587	3082	-47479	-8	P	-t	-0.9651	1.0867	0.0876	269.0	67.6	-	10S	25E
-1839 Oct 24	06:14:02	42575	3080	-47473	-3	P	-a	0.6897	1.6272	0.5582	325.7	164.4	-	7N	82E
-1838 Apr 18	23:41:21	42564	3078	-47467	2	T-	pp	-0.1720	2.5188	1.5654	320.4	210.9	93.5	5S	178W
-1838 Oct 13	07:19:10	42553	3077	-47461	7	T+	pp	0.0117	2.8886	1.7853	378.7	235.1	104.9	2N	66E
-1837 Apr 08	16:44:25	42542	3075	-47455	12	P	a-	0.5633	1.7959	0.8524	295.8	177.1	-	0S	72W
-1837 Oct 02	06:46:00	42530	3073	-47449	17	P	t-	-0.6688	1.6741	0.5883	336.5	171.2	-	3S	75E
-1836 Feb 27	22:28:52	42521	3071	-47444	-16	N	-a	-1.3223	0.4378	-0.5741	182.8	-	-	13N	156W
-1836 Mar 28	08:33:08	42519	3071	-47443	22	N	a-	1.3269	0.4116	-0.5653	171.6	-	-	5N	52E
-1836 Aug 21	23:48:21	42510	3069	-47438	-11	N	-a	1.4146	0.2584	-0.7338	138.6	-	-	16S	179W
-1836 Sep 20	11:50:33	42508	3069	-47437	27	N	a-	-1.3241	0.4435	-0.5863	185.2	-	-	9S	0W
-1835 Feb 16	04:38:03	42498	3068	-47432	-6	P	-t	-0.6305	1.7355	0.6673	337.7	179.6	-	17N	112E
-1835 Aug 11	14:53:01	42487	3066	-47426	-1	P	-a	0.6762	1.5948	0.6392	286.8	158.8	-	19S	46W
-1834 Feb 05	04:53:39	42476	3064	-47420	4	T+	pp	0.0869	2.7439	1.6541	376.6	234.7	103.6	20N	108E
-1834 Aug 01	07:24:41	42464	3062	-47414	9	T-	pp	-0.0309	2.7826	1.8198	322.8	213.3	99.4	22S	66E
-1833 Jan 25	06:13:41	42453	3060	-47408	14	P	h-	0.7918	1.4357	0.3750	313.2	139.1	-	23N	88E
-1833 Jul 21	20:42:18	42442	3058	-47402	19	P	t-	-0.7952	1.4024	0.3955	295.1	137.2	-	24S	134W
-1833 Dec 16	02:39:14	42432	3057	-47397	-14	N	-a	-1.2797	0.5040	-0.4842	185.8	-	-	21N	137E
-1832 Jan 14	14:17:23	42431	3056	-47396	24	N	a-	1.4442	0.2117	-0.7953	127.4	-	-	25N	35W
-1832 Jun 10	12:43:50	42421	3055	-47391	-9	N	-t	1.2247	0.6443	-0.4221	235.0	-	-	20S	17W
-1832 Dec 04	17:59:10	42410	3053	-47385	-4	P	-a	-0.6022	1.7386	0.7674	294.6	169.9	-	20N	94W
-1831 May 30	13:24:16	42399	3051	-47379	1	P	-t	0.4635	2.0369	0.9785	353.6	207.5	-	18S	27W
-1831 Nov 24	08:46:25	42387	3049	-47373	6	T+	pp	0.0634	2.7416	1.7415	331.2	215.0	98.6	17N	43E
-1830 May 19	18:36:39	42376	3047	-47367	11	T	a-	-0.3237	2.2694	1.2586	340.5	213.3	74.4	16S	105W
-1830 Nov 13	18:29:12	42365	3045	-47361	16	P	h-	0.7853	1.4458	0.3889	308.7	139.2	-	15N	103W
-1829 Apr 09	23:50:25	42355	3044	-47356	-17	N	-a	1.4480	0.1744	-0.7725	110.4	-	-	0N	179W
-1829 May 09	07:01:11	42354	3044	-47355	21	N	a-	-1.0611	0.8907	-0.0690	236.9	-	-	13S	69E
-1829 Oct 04	01:40:22	42344	3042	-47350	-12	N	-t	-1.5399	0.0842	-1.0182	90.6	-	-	3S	151E
-1829 Nov 02	20:53:29	42342	3042	-47349	26	N	t-	1.5074	0.1434	-0.9582	116.9	-	-	11N	140W
-1828 Mar 29	16:57:26	42333	3040	-47344	-7	P	-a	0.7346	1.4850	0.5348	281.4	148.5	-	4N	75W
-1828 Sep 22	02:13:52	42322	3038	-47338	-2	P	-t	-0.8283	1.3736	0.3034	310.6	127.0	-	7S	143E
-1827 Mar 19	07:32:41	42310	3037	-47332	3	T+	pp	0.0011	2.8528	1.8590	337.9	220.3	101.9	7N	67E
-1827 Sep 11	09:32:54	42299	3035	-47326	8	T-	pp	-0.0822	2.7124	1.7018	338.8	218.8	99.4	11S	34E
-1826 Mar 08	15:36:07	42288	3033	-47320	13	P	t-	-0.7847	1.4442	0.3926	314.5	142.6	-	10N	54W
-1826 Aug 31	23:25:17	42277	3031	-47314	18	P	a-	0.6175	1.7075	0.7420	294.5	168.9	-	14S	175W
-1825 Jan 26	23:49:20	42267	3029	-47309	-15	N	-t	1.4112	0.3132	-0.7749	169.7	-	-	23N	177W
-1825 Feb 25	16:58:03	42265	3029	-47308	23	N	t-	-1.5390	0.0762	-1.0072	85.8	-	-	14N	74W
-1825 Jul 23	06:57:58	42256	3028	-47303	-10	N	-a	-1.2889	0.4784	-0.4926	181.7	-	-	25S	71E



-1825 Aug 21	15:45:55	42254	3027	-47302	28	N	a-	1.3013	0.4513	-0.5110	173.5	-	-	17S	60W
-1824 Jan 16	02:40:44	42245	3026	-47297	-5	P	-t	0.6633	1.6650	0.6173	322.2	169.3	-	24N	139E
-1824 Jul 11	18:41:38	42233	3024	-47291	0	P	-a	-0.5908	1.7844	0.7637	324.0	182.6	-	24S	106W
-1823 Jan 04	12:38:29	42222	3022	-47285	5	T-	p-	-0.0715	2.7240	1.7294	330.9	215.3	98.7	24N	12W
-1823 Jun 30	23:19:49	42211	3020	-47279	10	T+	pp	0.1689	2.5806	1.5160	369.0	231.1	98.3	23S	176W
-1823 Dec 25	03:35:28	42200	3018	-47273	15	P	a-	-0.7418	1.4809	0.5125	280.5	144.7	-	23N	123E
-1822 Jun 19	23:49:27	42188	3016	-47267	20	P	t-	0.9245	1.1953	0.1285	302.1	86.8	-	22S	176E
-1822 Nov 15	06:49:04	42179	3015	-47262	-13	N	-a	1.3286	0.4279	-0.5874	177.7	-	-	16N	71E
-1822 Dec 14	19:02:18	42177	3015	-47261	25	N	a-	-1.4192	0.2477	-0.7399	133.3	-	-	21N	110W
-1821 May 10	17:02:18	42168	3013	-47256	-8	N	-t	-1.0379	0.9511	-0.0438	254.1	-	-	13S	82W
-1821 Nov 04	14:28:49	42157	3011	-47250	-3	P	-a	0.6937	1.6220	0.5491	326.5	163.7	-	11N	44W
-1820 Apr 29	07:02:41	42145	3009	-47244	2	T-	-p	-0.2442	2.3848	1.4346	317.4	207.5	86.3	9S	69E
-1820 Oct 23	15:14:23	42134	3007	-47238	7	T+	pp	0.0191	2.8763	1.7706	379.1	235.1	104.8	6N	55W
-1819 Apr 19	00:12:18	42123	3006	-47232	12	P	a-	0.4939	1.9228	0.9800	301.2	185.9	-	4S	173E
-1819 Oct 12	14:44:11	42112	3004	-47226	17	P	t-	-0.6570	1.6958	0.6099	337.1	173.4	-	1N	47W
-1818 Mar 10	05:55:11	42102	3002	-47221	-16	N	-a	-1.3795	0.3330	-0.6793	161.6	-	-	9N	90E
-1818 Apr 08	15:52:43	42100	3002	-47220	22	N	a-	1.2658	0.5245	-0.4536	192.3	-	-	0N	61W
-1818 Sep 02	07:53:24	42091	3000	-47215	-11	N	-a	1.4396	0.2128	-0.7797	126.0	-	-	13S	57E
-1818 Oct 01	20:06:21	42089	3000	-47214	27	N	a-	-1.3072	0.4742	-0.5549	190.3	-	-	4S	126W
-1817 Feb 27	11:46:18	42080	2999	-47209	-6	P	-t	-0.6838	1.6372	0.5701	332.6	169.1	-	14N	3E
-1817 Aug 22	23:00:56	42069	2997	-47203	-1	P	-a	0.7126	1.5293	0.5714	283.0	151.7	-	17S	169W
-1816 Feb 16	12:02:53	42057	2995	-47197	4	T+	pp	0.0414	2.8252	1.7397	376.3	235.4	105.4	18N	1W
-1816 Aug 11	15:18:09	42046	2993	-47191	9	T+	pp	0.0146	2.8150	1.8472	324.0	213.6	99.6	20S	54W
-1815 Feb 04	13:50:25	42035	2991	-47185	14	P	h-	0.7568	1.4967	0.4425	316.1	149.2	-	21N	28W
-1815 Aug 01	04:07:05	42024	2989	-47179	19	P	t-	-0.7438	1.5001	0.4866	303.2	150.6	-	23S	114E
-1815 Dec 26	11:18:18	42014	2988	-47174	-14	N	-a	-1.2836	0.4948	-0.4894	183.7	-	-	22N	7E
-1814 Jan 24	22:27:35	42012	2987	-47173	24	N	a-	1.4180	0.2566	-0.7443	139.1	-	-	24N	158W
-1814 Jun 21	19:06:59	42003	2986	-47168	-9	N	-t	1.3081	0.4928	-0.5764	208.9	-	-	22S	114W
-1814 Jul 21	10:03:51	42001	2986	-47167	29	Nb	t-	-1.5405	0.0629	-0.9994	76.4	-	-	25S	24E
-1814 Dec 16	02:49:24	41992	2984	-47162	-4	P	-a	-0.6050	1.7329	0.7626	294.4	169.6	-	22N	132E
-1813 Jun 10	19:49:20	41981	2982	-47156	1	P	-t	0.5482	1.8810	0.8236	346.0	195.4	-	20S	125W
-1813 Dec 05	17:30:24	41969	2980	-47150	6	T+	pp	0.0635	2.7423	1.7405	332.2	215.5	98.7	20N	89W
-1812 May 30	01:27:21	41958	2979	-47144	11	T-	p-	-0.2419	2.4179	1.4104	342.3	218.0	88.4	19S	150E
-1812 Nov 24	02:53:05	41947	2977	-47138	16	P	h-	0.7874	1.4433	0.3835	309.6	138.7	-	18N	129E
-1811 Apr 20	07:16:50	41938	2975	-47133	-17	Ne	-a	1.5142	0.0515	-0.8927	60.5	-	-	4S	66E
-1811 May 19	14:15:28	41936	2975	-47132	21	P	a-	-0.9826	1.0333	0.0763	250.6	60.6	-	16S	42W
-1811 Oct 14	09:30:08	41926	2973	-47127	-12	N	-t	-1.5518	0.0633	-1.0411	78.7	-	-	1N	32E
-1811 Nov 13	04:56:25	41924	2973	-47126	26	N	t-	1.5055	0.1477	-0.9556	118.8	-	-	15N	98E
-1810 Apr 10	00:28:46	41915	2971	-47121	-7	P	-a	0.8023	1.3606	0.4107	273.8	132.8	-	1S	169E
-1810 Oct 03	10:11:44	41904	2970	-47115	-2	P	-t	-0.8422	1.3480	0.2779	307.7	121.7	-	3S	21E

-1809 Mar 30	14:51:58	41893	2968	-47109	3	T+	pp	0.0659	2.7345	1.7396	338.9	220.5	101.2	3N	46W
-1809 Sep 22	17:48:21	41882	2966	-47103	8	T-	pp	-0.1011	2.6777	1.6675	337.5	217.8	98.3	7S	93W
-1808 Mar 18	22:34:10	41870	2964	-47097	13	P	t-	-0.7229	1.5576	0.5060	323.2	159.6	-	6N	161W
-1808 Sep 11	07:46:51	41859	2962	-47091	18	P	a-	0.5912	1.7567	0.7895	296.6	172.6	-	10S	58E
-1807 Feb 06	07:09:21	41850	2961	-47086	-15	N	-t	1.4467	0.2455	-0.8376	150.7	-	-	21N	72E
-1807 Mar 07	23:48:22	41848	2960	-47085	23	N	t-	-1.4803	0.1823	-0.8979	131.4	-	-	10N	179W
-1807 Aug 02	14:40:43	41839	2959	-47080	-10	N	-a	-1.3417	0.3843	-0.5923	164.9	-	-	23S	45W
-1807 Aug 31	23:58:38	41837	2959	-47079	28	N	a-	1.2722	0.5069	-0.4598	183.4	-	-	13S	175E
-1806 Jan 26	10:31:23	41827	2957	-47074	-5	P	-t	0.6882	1.6160	0.5748	317.8	164.0	-	23N	21E
-1806 Jul 23	01:52:15	41816	2955	-47068	0	P	-a	-0.6538	1.6722	0.6450	319.7	171.7	-	24S	146E
-1805 Jan 15	21:01:17	41805	2953	-47062	5	T-	pp	-0.0542	2.7532	1.7639	329.7	215.2	99.2	23N	138W
-1805 Jul 12	05:57:08	41794	2952	-47056	10	T+	pp	0.0950	2.7185	1.6494	371.7	233.7	103.6	24S	84E
-1804 Jan 05	12:15:19	41783	2950	-47050	15	P	a-	-0.7309	1.4998	0.5339	281.4	147.2	-	23N	8W
-1804 Jun 30	06:18:34	41771	2948	-47044	20	P	t-	0.8440	1.3435	0.2759	314.7	124.3	-	23S	77E
-1804 Nov 25	15:29:43	41762	2946	-47039	-13	N	-a	1.3302	0.4263	-0.5917	178.0	-	-	19N	60W
-1804 Dec 25	03:42:52	41760	2946	-47038	25	N	a-	-1.4174	0.2511	-0.7367	134.5	-	-	22N	119E
-1803 May 20	23:59:19	41751	2945	-47033	-8	N	-t	-1.1122	0.8129	-0.1783	237.3	-	-	17S	172E
-1803 Jun 19	10:21:33	41749	2944	-47032	30	Nb	t-	1.5510	0.0234	-0.9989	44.9	-	-	21S	16E
-1803 Nov 14	22:46:02	41740	2943	-47027	-3	P	-a	0.6948	1.6214	0.5454	327.6	163.7	-	15N	170W
-1802 May 10	14:22:28	41729	2941	-47021	2	T	-p	-0.3182	2.2478	1.3000	313.7	202.8	75.1	13S	44W
-1802 Nov 03	23:13:22	41717	2939	-47015	7	T+	pp	0.0233	2.8693	1.7621	379.5	235.1	104.7	10N	177W
-1801 Apr 30	07:38:08	41706	2937	-47009	12	T	a-	0.4229	2.0531	1.1103	306.1	193.4	48.2	8S	59E
-1801 Oct 23	22:49:18	41695	2935	-47003	17	P	h-	-0.6500	1.7085	0.6231	337.0	174.5	-	5N	170W
-1800 Mar 20	13:13:37	41686	2934	-46998	-16	N	-a	-1.4420	0.2187	-0.7943	132.8	-	-	5N	22W
-1800 Apr 18	23:06:54	41684	2934	-46997	22	N	a-	1.2008	0.6444	-0.3353	211.4	-	-	4S	172W
-1800 Sep 12	16:06:52	41674	2932	-46992	-11	N	-a	1.4586	0.1780	-0.8148	115.3	-	-	9S	68W
-1800 Oct 12	04:29:27	41673	2932	-46991	27	N	a-	-1.2953	0.4955	-0.5327	193.5	-	-	0N	106E

## 18TH CENTURY BCE

**In the 18th century BCE the total number of lunar eclipses was 254 lunar eclipses: 94 penumbral lunar eclipses, 99 partial lunar eclipses, 61 total lunar eclipses (49 central total lunar eclipses, 12 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-1799 Mar 09	18:45:29	41663	2930	-46986	-6	P	-t	-0.7437	1.5268	0.4607	326.0	155.0	-	10N	104W
-1799 Sep 02	07:17:03	41652	2928	-46980	-1	P	-a	0.7421	1.4763	0.5159	279.8	145.3	-	13S	65E
-1798 Feb 26	19:02:48	41641	2927	-46974	4	T-	pp	-0.0119	2.8770	1.7959	375.6	235.5	105.9	14N	107W
-1798 Aug 22	23:20:12	41630	2925	-46968	9	T+	pp	0.0522	2.7487	1.7756	325.0	213.6	99.0	17S	176W
-1797 Feb 15	21:19:31	41619	2923	-46962	14	P	h-	0.7148	1.5706	0.5229	319.5	159.7	-	18N	141W
-1797 Aug 12	11:38:33	41607	2921	-46956	19	P	t-	-0.6987	1.5862	0.5660	310.2	160.9	-	21S	1W
-1796 Jan 06	19:51:27	41598	2920	-46951	-14	N	-a	-1.2928	0.4758	-0.5040	179.9	-	-	23N	122W
-1796 Feb 05	06:30:40	41596	2919	-46950	24	N	a-	1.3855	0.3133	-0.6816	152.2	-	-	22N	81E
-1796 Jul 02	01:35:23	41587	2918	-46945	-9	N	-t	1.3862	0.3510	-0.7214	178.9	-	-	22S	148E
-1796 Jul 31	17:00:21	41585	2917	-46944	29	N	t-	-1.4853	0.1669	-0.9010	123.8	-	-	23S	82W
-1796 Dec 26	11:33:45	41576	2916	-46939	-4	P	-a	-0.6129	1.7176	0.7488	293.7	168.6	-	23N	1E
-1795 Jun 21	02:19:10	41565	2914	-46933	1	P	-t	0.6296	1.7314	0.6746	337.5	181.0	-	22S	136E
-1795 Dec 16	02:09:41	41553	2912	-46927	6	T+	pp	0.0603	2.7489	1.7459	333.2	216.1	99.0	22N	140E
-1794 Jun 10	08:22:31	41542	2910	-46921	11	T-	pp	-0.1624	2.5625	1.5575	343.1	220.9	96.7	21S	45E
-1794 Dec 05	11:13:22	41531	2909	-46915	16	P	h-	0.7874	1.4444	0.3826	310.7	139.0	-	21N	3E
-1793 May 30	21:32:11	41520	2907	-46909	21	P	a-	-0.9053	1.1742	0.2191	262.2	100.5	-	19S	153W
-1793 Oct 25	17:26:39	41511	2905	-46904	-12	N	-t	-1.5583	0.0521	-1.0536	71.4	-	-	6N	90W
-1793 Nov 24	13:00:11	41509	2905	-46903	26	N	t-	1.5045	0.1501	-0.9541	119.9	-	-	19N	25W
-1792 Apr 20	07:53:41	41499	2903	-46898	-7	P	-a	0.8749	1.2275	0.2774	264.6	111.5	-	5S	55E
-1792 Oct 13	18:18:33	41488	2902	-46892	-2	P	-t	-0.8497	1.3339	0.2644	305.7	118.6	-	2N	103W
-1791 Apr 09	22:02:21	41477	2900	-46886	3	T+	pp	0.1371	2.6046	1.6083	339.2	219.7	98.0	1S	156W
-1791 Oct 03	02:12:51	41466	2898	-46880	8	T-	pp	-0.1134	2.6548	1.6450	336.3	216.8	97.4	2S	139E
-1790 Mar 30	05:22:30	41455	2896	-46874	13	P	t-	-0.6536	1.6849	0.6332	331.9	175.3	-	2N	94E
-1790 Sep 22	16:17:19	41444	2894	-46868	18	P	a-	0.5719	1.7929	0.8241	298.0	175.1	-	6S	72W
-1789 Feb 17	14:22:07	41434	2893	-46863	-15	N	-t	1.4884	0.1664	-0.9115	124.6	-	-	18N	37W
-1789 Mar 19	06:31:43	41433	2893	-46862	23	N	t-	-1.4154	0.2998	-0.7771	166.5	-	-	6N	78E
-1789 Aug 13	22:29:18	41423	2891	-46857	-10	N	-a	-1.3893	0.2999	-0.6825	147.4	-	-	21S	164W
-1789 Sep 12	08:17:51	41421	2891	-46856	28	N	a-	1.2487	0.5523	-0.4189	191.0	-	-	9S	48E
-1788 Feb 06	18:16:56	41412	2889	-46851	-5	P	-t	0.7183	1.5575	0.5230	312.7	157.2	-	21N	97W
-1788 Aug 02	09:07:59	41401	2887	-46845	0	P	-a	-0.7117	1.5691	0.5353	315.2	159.7	-	22S	36E
-1787 Jan 26	05:17:30	41390	2886	-46839	5	T-	pp	-0.0307	2.7934	1.8096	328.5	215.0	99.6	22N	97E
-1787 Jul 22	12:40:43	41379	2884	-46833	10	T+	pp	0.0265	2.8464	1.7727	373.4	234.9	105.8	23S	18W
-1786 Jan 15	20:48:13	41368	2882	-46827	15	P	a-	-0.7141	1.5292	0.5660	283.0	150.8	-	23N	137W

-1786 Jul 11	12:56:25	41357	2880	-46821	20	P	t-	0.7698	1.4801	0.4116	324.8	148.5	-	23S	23W
-1786 Dec 07	00:06:08	41347	2879	-46816	-13	N	-a	1.3349	0.4187	-0.6012	177.1	-	-	22N	169E
-1785 Jan 05	12:15:48	41345	2878	-46815	25	N	a-	-1.4100	0.2647	-0.7232	138.2	-	-	22N	10W
-1785 Jun 01	07:01:28	41336	2877	-46810	-8	N	-h	-1.1832	0.6811	-0.3071	219.2	-	-	20S	64E
-1785 Jun 30	17:18:54	41334	2876	-46809	30	N	h-	1.4762	0.1599	-0.8608	115.6	-	-	22S	89W
-1785 Nov 26	07:01:25	41325	2875	-46804	-3	P	-h	0.6971	1.6184	0.5401	328.5	163.4	-	19N	65E
-1784 May 20	21:42:22	41314	2873	-46798	2	T	-a	-0.3927	2.1103	1.1642	309.3	196.8	58.0	16S	156W
-1784 Nov 14	07:14:30	41303	2871	-46792	7	T+	pp	0.0259	2.8649	1.7571	379.6	235.2	104.7	14N	61E
-1783 May 10	15:00:25	41292	2870	-46786	12	T	p-	0.3489	2.1893	1.2459	310.5	199.8	69.0	12S	55W
-1783 Nov 03	06:59:09	41280	2868	-46780	17	P	h-	-0.6461	1.7149	0.6309	336.5	174.9	-	10N	65E
-1782 Mar 31	20:21:19	41271	2866	-46775	-16	Ne	-h	-1.5120	0.0909	-0.9233	87.0	-	-	1N	132W
-1782 Apr 30	06:14:49	41269	2866	-46774	22	N	h-	1.1314	0.7730	-0.2089	229.5	-	-	8S	78E
-1782 Sep 24	00:30:44	41260	2864	-46769	-11	N	-a	1.4703	0.1566	-0.8362	108.0	-	-	5S	164E
-1782 Oct 23	12:59:51	41258	2864	-46768	27	N	a-	-1.2884	0.5074	-0.5193	194.9	-	-	5N	24W
-1781 Mar 21	01:34:31	41249	2863	-46763	-6	P	-t	-0.8109	1.4029	0.3377	317.6	135.6	-	6N	151E
-1781 Sep 13	15:41:19	41238	2861	-46757	-1	P	-a	0.7652	1.4352	0.4722	277.3	139.8	-	9S	63W
-1780 Mar 09	01:54:16	41227	2859	-46751	4	T-	pp	-0.0724	2.7638	1.6871	374.4	234.8	104.7	10N	147E
-1780 Sep 02	07:29:31	41216	2857	-46745	9	T+	-p	0.0831	2.6945	1.7161	325.9	213.5	98.0	14S	60E
-1779 Feb 26	04:40:10	41204	2855	-46739	14	P	h-	0.6647	1.6591	0.6181	323.3	170.4	-	15N	107E
-1779 Aug 22	19:17:26	41193	2854	-46733	19	P	t-	-0.6605	1.6598	0.6327	316.0	168.8	-	18S	117W
-1778 Jan 17	04:18:56	41184	2852	-46728	-14	N	-a	-1.3072	0.4470	-0.5282	174.4	-	-	22N	110E
-1778 Feb 15	14:26:33	41182	2852	-46727	24	N	a-	1.3464	0.3819	-0.6068	166.3	-	-	19N	40W
-1778 Jul 13	08:09:41	41173	2850	-46722	-9	N	-t	1.4593	0.2187	-0.8571	143.2	-	-	23S	48E
-1778 Aug 12	00:04:30	41171	2850	-46721	29	N	t-	-1.4362	0.2600	-0.8135	153.7	-	-	21S	171E
-1777 Jan 06	20:12:52	41162	2848	-46716	-4	P	-a	-0.6254	1.6940	0.7268	292.6	166.8	-	23N	130W
-1777 Jul 02	08:56:22	41151	2847	-46710	1	P	-t	0.7056	1.5919	0.5354	328.3	164.6	-	23S	36E
-1777 Dec 27	10:44:55	41140	2845	-46704	6	T+	pp	0.0542	2.7604	1.7566	334.2	216.7	99.4	24N	11E
-1776 Jun 20	15:22:23	41129	2843	-46698	11	T-	pp	-0.0858	2.7020	1.6992	343.0	222.2	101.1	23S	62W
-1776 Dec 15	19:30:19	41117	2841	-46692	16	P	t-	0.7854	1.4488	0.3855	312.1	139.8	-	23N	122W
-1775 Jun 10	04:52:00	41106	2839	-46686	21	P	a-	-0.8300	1.3118	0.3580	272.2	125.7	-	22S	95E
-1775 Nov 05	01:26:04	41097	2838	-46681	-12	N	-t	-1.5626	0.0444	-1.0617	65.9	-	-	10N	148E
-1775 Dec 04	21:00:41	41095	2838	-46680	26	N	t-	1.5010	0.1564	-0.9478	122.4	-	-	22N	146W
-1774 May 01	15:15:44	41086	2836	-46675	-7	P	-a	0.9495	1.0911	0.1400	253.8	80.9	-	9S	58W
-1774 May 30	21:58:10	41084	2836	-46674	31	Nb	a-	-1.5344	0.0127	-0.9278	30.0	-	-	20S	162W
-1774 Oct 25	02:31:19	41075	2834	-46669	-2	P	-t	-0.8530	1.3273	0.2591	304.3	117.2	-	6N	132E
-1773 Apr 21	05:07:47	41064	2832	-46663	3	T+	-p	0.2116	2.4688	1.4705	338.8	217.5	91.7	5S	94E
-1773 Oct 14	10:43:32	41053	2831	-46657	8	T-	pp	-0.1214	2.6397	1.6307	335.1	216.0	96.7	2N	9E
-1772 Apr 09	12:03:34	41042	2829	-46651	13	P	t-	-0.5789	1.8221	0.7699	340.3	189.4	-	2S	9W
-1772 Oct 03	00:54:56	41030	2827	-46645	18	P	a-	0.5583	1.8186	0.8484	298.9	176.7	-	2S	156E
-1771 Feb 27	21:24:13	41021	2826	-46640	-15	Ne	-t	1.5387	0.0714	-1.0012	82.1	-	-	15N	145W

-1771 Mar 29	13:05:15	41019	2825	-46639	23	N	t-	-1.3421	0.4328	-0.6411	197.5	-	-	2N	24W
-1771 Aug 24	06:26:41	41010	2824	-46634	-10	N	-a	-1.4293	0.2297	-0.7587	130.4	-	-	18S	76E
-1771 Sep 22	16:45:49	41008	2823	-46633	28	N	a-	1.2327	0.5838	-0.3916	196.3	-	-	5S	81W
-1770 Feb 17	01:53:06	40999	2822	-46628	-5	P	-t	0.7569	1.4832	0.4554	306.3	147.8	-	18N	148E
-1770 Aug 13	16:32:03	40988	2820	-46622	0	P	-a	-0.7618	1.4807	0.4402	310.9	147.5	-	20S	76W
-1769 Feb 06	13:25:32	40977	2818	-46616	5	T+	pp	0.0002	2.8466	1.8683	327.2	214.8	99.8	20N	26W
-1769 Aug 02	19:32:57	40966	2817	-46610	10	T-	pp	-0.0345	2.8343	1.7559	374.4	235.0	105.6	22S	122W
-1768 Jan 27	05:14:04	40955	2815	-46604	15	P	a-	-0.6915	1.5691	0.6088	285.1	155.4	-	21N	96E
-1768 Jul 21	19:41:28	40944	2813	-46598	20	P	t-	0.7005	1.6078	0.5381	333.0	166.1	-	23S	125W
-1768 Dec 17	08:39:54	40934	2812	-46593	-13	N	-a	1.3411	0.4080	-0.6134	175.6	-	-	24N	40E
-1767 Jan 15	20:42:15	40933	2811	-46592	25	N	a-	-1.3982	0.2863	-0.7013	143.8	-	-	22N	137W
-1767 Jun 11	14:06:02	40923	2810	-46587	-8	N	-h	-1.2532	0.5514	-0.4344	198.9	-	-	22S	44W
-1767 Jul 11	00:23:08	40921	2809	-46586	30	N	h-	1.4052	0.2895	-0.7301	153.1	-	-	23S	163E
-1767 Dec 06	15:14:34	40912	2808	-46581	-3	P	-h	0.7004	1.6131	0.5332	329.1	162.9	-	21N	59W
-1766 Jun 01	05:03:42	40901	2806	-46575	2	T	-a	-0.4665	1.9744	1.0293	304.3	189.5	25.5	19S	92E
-1766 Nov 25	15:16:29	40890	2804	-46569	7	T+	pp	0.0280	2.8610	1.7533	379.6	235.2	104.7	18N	61W
-1765 May 21	22:22:00	40879	2803	-46563	12	T	p-	0.2746	2.3262	1.3815	314.2	205.0	82.1	16S	167W
-1765 Nov 14	15:12:03	40868	2801	-46557	17	P	h-	-0.6440	1.7178	0.6358	335.7	175.1	-	14N	60W
-1764 May 10	13:19:43	40857	2799	-46551	22	N	h-	1.0600	0.9053	-0.0794	246.0	-	-	12S	31W
-1764 Oct 04	09:01:37	40848	2797	-46546	-11	N	-a	1.4771	0.1442	-0.8486	103.5	-	-	0S	34E
-1764 Nov 02	21:34:28	40846	2797	-46545	27	N	a-	-1.2845	0.5136	-0.5111	195.3	-	-	9N	155W
-1763 Mar 31	08:14:31	40837	2796	-46540	-6	P	-t	-0.8846	1.2675	0.2030	307.1	107.4	-	1N	49E
-1763 Sep 24	00:13:24	40826	2794	-46534	-1	P	-a	0.7820	1.4057	0.4403	275.5	135.6	-	5S	166E
-1762 Mar 20	08:38:14	40814	2792	-46528	4	T-	pp	-0.1392	2.6391	1.5666	372.3	233.0	100.9	6N	44E
-1762 Sep 13	15:46:21	40803	2790	-46522	9	T+	-p	0.1073	2.6529	1.6693	326.8	213.3	97.0	10S	66W
-1761 Mar 09	11:54:31	40792	2789	-46516	14	P	h-	0.6084	1.7590	0.7246	327.2	180.7	-	11N	4W
-1761 Sep 03	03:04:16	40781	2787	-46510	19	P	t-	-0.6296	1.7198	0.6861	320.9	174.8	-	14S	125E
-1760 Jan 28	12:38:43	40772	2785	-46505	-14	N	-a	-1.3283	0.4059	-0.5646	166.4	-	-	20N	16W
-1760 Feb 26	22:14:41	40770	2785	-46504	24	N	a-	1.3003	0.4634	-0.5192	181.0	-	-	16N	159W
-1760 Jul 23	14:51:07	40761	2783	-46499	-9	N	-t	1.5259	0.0983	-0.9810	97.1	-	-	22S	53W
-1760 Aug 22	07:16:56	40759	2783	-46498	29	N	t-	-1.3938	0.3404	-0.7386	175.2	-	-	18S	62E
-1759 Jan 17	04:44:15	40750	2782	-46493	-4	P	-a	-0.6439	1.6590	0.6937	291.0	164.0	-	23N	102E
-1759 Jul 12	15:41:48	40739	2780	-46487	1	P	-t	0.7751	1.4644	0.4077	318.9	146.2	-	23S	67W
-1758 Jan 06	19:11:23	40728	2778	-46481	6	T+	pp	0.0418	2.7833	1.7792	335.3	217.5	100.0	24N	116W
-1758 Jul 01	22:30:00	40717	2776	-46475	11	T-	pp	-0.0146	2.8318	1.8304	342.1	222.3	102.5	24S	170W
-1758 Dec 27	03:40:48	40706	2774	-46469	16	P	t-	0.7793	1.4603	0.3963	313.8	141.9	-	24N	115E
-1757 Jun 21	12:15:36	40695	2773	-46463	21	P	a-	-0.7573	1.4449	0.4917	280.6	144.0	-	23S	17W
-1757 Nov 16	09:28:34	40685	2771	-46458	-12	N	-t	-1.5644	0.0408	-1.0649	63.2	-	-	14N	26E
-1757 Dec 16	04:58:32	40684	2771	-46457	26	N	t-	1.4957	0.1659	-0.9376	126.0	-	-	24N	94E
-1756 May 11	22:33:59	40674	2769	-46452	-7	N	-a	1.0264	0.9508	-0.0019	241.2	-	-	12S	170W

-1756 Jun 10	05:22:18	40673	2769	-46451	31	N	a-	-1.4650	0.1408	-0.8013	99.0	-	-	22S	86E
-1756 Nov 04	10:49:55	40663	2768	-46446	-2	P	-t	-0.8525	1.3272	0.2608	303.3	117.3	-	10N	5E
-1755 May 01	12:05:43	40652	2766	-46440	3	T	-a	0.2914	2.3237	1.3229	337.4	213.7	80.6	9S	13W
-1755 Oct 24	19:21:17	40641	2764	-46434	8	T-	pp	-0.1244	2.6336	1.6259	334.0	215.4	96.4	7N	123W
-1754 Apr 20	18:38:00	40630	2762	-46428	13	P	t-	-0.4993	1.9687	0.9156	348.0	201.8	-	6S	110W
-1754 Oct 14	09:38:42	40619	2761	-46422	18	P	a-	0.5496	1.8351	0.8638	299.5	177.7	-	3N	23E
-1753 Apr 09	19:34:44	40608	2759	-46416	23	N	t-	-1.2648	0.5732	-0.4979	224.0	-	-	2S	124W
-1753 Sep 04	14:31:06	40599	2757	-46411	-10	N	-a	-1.4629	0.1710	-0.8233	113.6	-	-	15S	47W
-1753 Oct 04	01:19:56	40597	2757	-46410	28	N	a-	1.2221	0.6053	-0.3744	200.0	-	-	1S	148E
-1752 Feb 28	09:23:34	40588	2755	-46405	-5	P	-t	0.8011	1.3987	0.3777	298.9	135.8	-	15N	33E
-1752 Aug 24	00:02:23	40577	2754	-46399	0	P	-a	-0.8058	1.4033	0.3562	306.9	134.8	-	17S	170E
-1751 Feb 16	21:26:57	40566	2752	-46393	5	T+	pp	0.0374	2.7756	1.8028	325.8	214.3	99.5	17N	148W
-1751 Aug 13	02:33:38	40555	2750	-46387	10	T-	pp	-0.0885	2.7376	1.6545	374.9	234.3	103.7	20S	131E
-1750 Feb 06	13:30:53	40544	2748	-46381	15	P	a-	-0.6615	1.6229	0.6653	287.9	161.1	-	19N	29W
-1750 Aug 02	02:37:34	40533	2747	-46375	20	P	t-	0.6392	1.7209	0.6499	339.3	178.9	-	21S	130E
-1750 Dec 28	17:06:44	40524	2745	-46370	-13	N	-a	1.3528	0.3872	-0.6353	171.9	-	-	25N	87W
-1749 Jan 27	04:59:43	40522	2745	-46369	25	N	a-	-1.3795	0.3204	-0.6669	152.0	-	-	21N	98E
-1749 Jun 22	21:16:51	40513	2743	-46364	-8	N	-h	-1.3189	0.4299	-0.5541	177.0	-	-	24S	153W
-1749 Jul 22	07:36:33	40511	2743	-46363	30	N	h-	1.3403	0.4083	-0.6106	179.2	-	-	22S	54E
-1749 Dec 17	23:22:17	40502	2742	-46358	-3	P	-h	0.7078	1.6001	0.5193	329.1	161.5	-	23N	178E
-1748 Jun 11	12:27:50	40491	2740	-46352	2	P	-a	-0.5385	1.8420	0.8973	298.7	180.9	-	22S	21W
-1748 Dec 05	23:15:38	40480	2738	-46346	7	T+	pp	0.0323	2.8525	1.7460	379.5	235.2	104.7	21N	179E
-1747 Jun 01	05:42:34	40469	2736	-46340	12	T+	p-	0.1998	2.4645	1.5177	317.3	208.9	90.9	19S	80E
-1747 Nov 24	23:26:10	40458	2734	-46334	17	P	h-	-0.6420	1.7199	0.6408	334.8	175.2	-	17N	175E
-1746 May 21	20:21:48	40447	2733	-46328	22	P	h-	0.9871	1.0408	0.0526	261.1	52.1	-	15S	139W
-1746 Oct 15	17:39:37	40437	2731	-46323	-11	N	-a	1.4790	0.1403	-0.8519	101.9	-	-	4N	98W
-1746 Nov 14	06:11:51	40436	2731	-46322	27	N	a-	-1.2820	0.5168	-0.5052	195.2	-	-	13N	74E
-1745 Apr 11	14:47:07	40426	2729	-46317	-6	P	-t	-0.9634	1.1227	0.0585	294.1	59.0	-	3S	53W
-1745 Oct 05	08:53:09	40415	2728	-46311	-1	P	-a	0.7927	1.3871	0.4195	274.3	132.8	-	1S	34E
-1744 Mar 30	15:14:30	40404	2726	-46305	4	T-	pp	-0.2128	2.5019	1.4337	369.4	229.6	93.5	2N	58W
-1744 Sep 24	00:10:36	40393	2724	-46299	9	T+	-p	0.1247	2.6235	1.6347	327.8	213.2	96.0	6S	165E
-1743 Mar 19	19:02:06	40382	2722	-46293	14	P	h-	0.5453	1.8716	0.8436	331.0	190.5	-	7N	114W
-1743 Sep 13	10:58:50	40371	2721	-46287	19	P	t-	-0.6059	1.7666	0.7263	324.9	179.1	-	10S	4E
-1742 Feb 07	20:51:02	40362	2719	-46282	-14	N	-a	-1.3559	0.3528	-0.6129	155.5	-	-	18N	140W
-1742 Mar 09	05:55:59	40360	2719	-46281	24	N	a-	1.2479	0.5567	-0.4201	195.8	-	-	12N	84E
-1742 Sep 02	14:38:30	40349	2717	-46275	29	N	t-	-1.3589	0.4072	-0.6772	191.0	-	-	15S	50W
-1741 Jan 28	13:09:16	40340	2716	-46270	-4	P	-a	-0.6676	1.6145	0.6511	288.8	160.2	-	21N	25W
-1741 Jul 23	22:35:18	40329	2714	-46264	1	P	-t	0.8386	1.3479	0.2911	309.3	125.4	-	22S	171W
-1740 Jan 18	03:31:33	40318	2712	-46258	6	T+	pp	0.0248	2.8146	1.8103	336.4	218.2	100.5	23N	118E
-1740 Jul 12	05:44:49	40307	2710	-46252	11	T+	pp	0.0513	2.7640	1.7638	340.6	221.3	101.7	24S	81E

-1739 Jan 06	11:43:26	40296	2708	-46246	16	P	t-	0.7674	1.4825	0.4181	316.3	145.7	-	25N	6W
-1739 Jul 01	19:44:57	40285	2707	-46240	21	P	a-	-0.6886	1.5708	0.6177	287.6	158.0	-	24S	130W
-1739 Nov 26	17:30:34	40276	2705	-46235	-12	N	-t	-1.5669	0.0357	-1.0687	59.0	-	-	17N	96W
-1739 Dec 26	12:49:51	40274	2705	-46234	26	N	t-	1.4851	0.1844	-0.9175	132.7	-	-	25N	24W
-1738 May 23	05:52:14	40265	2703	-46229	-7	N	-a	1.1030	0.8114	-0.1436	226.7	-	-	16S	78E
-1738 Jun 21	12:50:55	40263	2703	-46228	31	N	a-	-1.3989	0.2631	-0.6813	134.1	-	-	24S	28W
-1738 Nov 15	19:09:40	40254	2702	-46223	-2	P	-t	-0.8519	1.3270	0.2632	302.2	117.4	-	14N	122W
-1737 May 12	19:01:43	40243	2700	-46217	3	T	-a	0.3718	2.1778	1.1739	335.1	208.2	62.4	13S	119W
-1737 Nov 05	04:02:51	40232	2698	-46211	8	T-	pp	-0.1249	2.6317	1.6259	332.9	214.9	96.2	11N	105E
-1736 May 01	01:06:08	40221	2696	-46205	13	T	t-	-0.4150	2.1239	1.0695	355.0	212.4	42.4	10S	150E
-1736 Oct 24	18:27:48	40210	2695	-46199	18	P	a-	0.5451	1.8436	0.8715	299.7	178.1	-	7N	112W
-1735 Apr 20	01:57:15	40199	2693	-46193	23	N	t-	-1.1815	0.7248	-0.3438	247.8	-	-	6S	138E
-1735 Sep 14	22:44:00	40190	2691	-46188	-10	N	-a	-1.4893	0.1255	-0.8747	98.1	-	-	11S	173W
-1735 Oct 14	10:00:21	40188	2691	-46187	28	N	a-	1.2171	0.6164	-0.3670	202.1	-	-	4N	15E
-1734 Mar 10	16:45:12	40179	2690	-46182	-5	P	-t	0.8534	1.2993	0.2849	289.9	119.2	-	11N	79W
-1734 Sep 04	07:42:03	40168	2688	-46176	0	P	-a	-0.8413	1.3415	0.2878	303.6	122.8	-	14S	53E
-1733 Feb 28	05:20:26	40157	2686	-46170	5	T+	pp	0.0820	2.6910	1.7235	324.2	213.4	98.4	14N	92E
-1733 Aug 24	09:42:25	40146	2684	-46164	10	T-	pp	-0.1356	2.6534	1.5657	375.1	233.1	100.6	17S	23E
-1732 Feb 17	21:40:09	40135	2683	-46158	15	P	a-	-0.6251	1.6882	0.7334	291.2	167.3	-	16N	153W
-1732 Aug 12	09:42:51	40124	2681	-46152	20	P	t-	0.5844	1.8222	0.7498	344.2	188.6	-	19S	22E
-1731 Jan 08	01:26:37	40115	2679	-46147	-13	N	-a	1.3692	0.3574	-0.6657	166.2	-	-	25N	148E
-1731 Feb 06	13:07:41	40113	2679	-46146	25	N	a-	-1.3541	0.3668	-0.6200	162.4	-	-	19N	25W
-1731 Jul 03	04:32:55	40104	2678	-46141	-8	N	-a	-1.3811	0.3152	-0.6676	152.7	-	-	25S	97E
-1731 Aug 01	14:59:12	40102	2677	-46140	30	N	a-	1.2816	0.5158	-0.5027	198.6	-	-	21S	58W
-1731 Dec 28	07:24:28	40093	2676	-46135	-3	P	-t	0.7190	1.5797	0.4987	328.6	159.2	-	24N	57E
-1730 Jun 22	19:55:53	40082	2674	-46129	2	P	-a	-0.6074	1.7158	0.7708	292.7	171.1	-	24S	134W
-1730 Dec 17	07:11:34	40071	2672	-46123	7	T+	pp	0.0394	2.8385	1.7339	379.1	235.1	104.6	23N	59E
-1729 Jun 12	13:05:25	40060	2671	-46117	12	T+	pp	0.1273	2.5989	1.6495	319.7	211.6	96.4	21S	32W
-1729 Dec 06	07:40:23	40049	2669	-46111	17	P	a-	-0.6393	1.7230	0.6475	333.8	175.5	-	20N	51E
-1728 Jun 01	03:22:01	40038	2667	-46105	22	P	t-	0.9134	1.1780	0.1858	274.9	96.5	-	18S	114E
-1728 Oct 26	02:22:43	40029	2666	-46100	-11	N	-a	1.4777	0.1424	-0.8491	102.4	-	-	9N	129E
-1728 Nov 24	14:50:43	40027	2665	-46099	27	N	a-	-1.2801	0.5188	-0.5000	194.8	-	-	16N	58W
-1727 Apr 21	21:13:46	40018	2664	-46094	-6	N	-t	-1.0463	0.9706	-0.0935	278.3	-	-	7S	152W
-1727 Oct 15	17:38:04	40007	2662	-46088	-1	P	-a	0.7993	1.3760	0.4064	273.7	130.9	-	4N	99W
-1726 Apr 10	21:46:05	39996	2660	-46082	4	T	pp	-0.2906	2.3573	1.2928	365.4	224.6	81.1	2S	159W
-1726 Oct 05	08:41:14	39985	2659	-46076	9	T+	-p	0.1364	2.6044	1.6108	328.8	213.3	95.3	1S	35E
-1725 Mar 31	02:05:15	39974	2657	-46070	14	P	a-	0.4775	1.9929	0.9709	334.5	199.1	-	3N	138E
-1725 Sep 24	18:59:30	39963	2655	-46064	19	P	t-	-0.5880	1.8024	0.7560	328.3	182.4	-	6S	118W
-1724 Feb 19	04:55:36	39954	2654	-46059	-14	N	-a	-1.3902	0.2876	-0.6734	140.9	-	-	15N	97E
-1724 Mar 19	13:31:04	39952	2653	-46058	24	N	a-	1.1896	0.6608	-0.3105	210.3	-	-	8N	33W

-1724 Sep 12	22:08:47	39941	2652	-46052	29	N	t-	-1.3313	0.4604	-0.6290	202.7	-	-	11S	165W
-1723 Feb 07	21:23:44	39932	2650	-46047	-4	P	-a	-0.6999	1.5544	0.5929	285.7	154.5	-	19N	150W
-1723 Aug 03	05:39:46	39921	2648	-46041	1	P	-t	0.8938	1.2470	0.1897	300.1	102.5	-	21S	82E
-1722 Jan 28	11:41:06	39910	2647	-46035	6	T-	pp	-0.0000	2.8601	1.8558	337.5	219.0	101.0	22N	5W
-1722 Jul 23	13:09:10	39900	2645	-46029	11	T+	pp	0.1103	2.6553	1.6558	338.7	219.5	99.1	23S	31W
-1721 Jan 17	19:36:52	39889	2643	-46023	16	P	t-	0.7487	1.5166	0.4524	319.5	151.1	-	24N	125W
-1721 Jul 13	03:20:53	39878	2641	-46017	21	P	a-	-0.6251	1.6877	0.7340	293.3	168.7	-	24S	115E
-1721 Dec 08	01:32:22	39869	2640	-46012	-12	N	-t	-1.5696	0.0296	-1.0726	53.8	-	-	20N	142E
-1720 Jan 06	20:35:22	39867	2640	-46011	26	N	t-	1.4700	0.2111	-0.8886	141.6	-	-	25N	141W
-1720 Jun 02	13:07:58	39858	2638	-46006	-7	N	-a	1.1807	0.6703	-0.2876	209.7	-	-	18S	33W
-1720 Jul 01	20:21:26	39856	2638	-46005	31	N	a-	-1.3349	0.3822	-0.5652	160.0	-	-	25S	141W
-1720 Nov 26	03:32:37	39847	2637	-46000	-2	P	-h	-0.8495	1.3298	0.2694	301.3	118.3	-	17N	111E
-1719 May 23	01:53:26	39836	2635	-45994	3	T	-a	0.4543	2.0282	1.0206	331.6	200.6	22.6	16S	135E
-1719 Nov 15	12:47:20	39825	2633	-45988	8	T-	pp	-0.1236	2.6331	1.6295	331.8	214.4	96.1	15N	28W
-1718 May 12	07:30:59	39814	2631	-45982	13	T	tp	-0.3287	2.2831	1.2270	360.9	220.9	72.9	14S	51E
-1718 Nov 05	03:20:38	39803	2630	-45976	18	P	a-	0.5442	1.8457	0.8732	299.6	178.1	-	12N	113E
-1717 May 01	08:18:03	39792	2628	-45970	23	N	t-	-1.0958	0.8808	-0.1856	268.6	-	-	10S	40E
-1717 Sep 26	07:02:11	39783	2626	-45965	-10	N	-a	-1.5108	0.0888	-0.9170	83.1	-	-	6S	61E
-1717 Oct 25	18:44:09	39781	2626	-45964	28	N	a-	1.2155	0.6212	-0.3657	203.3	-	-	8N	118W
-1716 Mar 21	00:02:45	39772	2625	-45959	-5	P	-t	0.9100	1.1924	0.1844	279.6	97.0	-	7N	169E
-1716 Sep 14	15:28:04	39761	2623	-45953	0	P	-h	-0.8708	1.2905	0.2304	300.9	111.1	-	10S	66W
-1715 Mar 10	13:06:32	39750	2621	-45947	5	T+	pp	0.1335	2.5941	1.6317	322.3	212.0	95.9	10N	27W
-1715 Sep 03	17:00:57	39739	2619	-45941	10	T-	pp	-0.1746	2.5841	1.4920	375.0	231.7	97.0	13S	89W
-1714 Feb 28	05:40:50	39728	2618	-45935	15	P	a-	-0.5817	1.7667	0.8143	295.0	174.1	-	13N	85E
-1714 Aug 23	16:59:12	39718	2616	-45929	20	P	t-	0.5380	1.9081	0.8344	347.8	195.6	-	16S	89W
-1713 Jan 19	09:36:49	39708	2614	-45924	-13	N	-a	1.3928	0.3143	-0.7092	157.0	-	-	24N	25E
-1713 Feb 17	21:05:56	39707	2614	-45923	25	N	a-	-1.3215	0.4264	-0.5601	174.6	-	-	16N	147W
-1713 Jul 14	11:57:54	39697	2613	-45918	-8	N	-a	-1.4370	0.2123	-0.7696	126.1	-	-	25S	15W
-1713 Aug 12	22:32:47	39696	2612	-45917	30	N	a-	1.2306	0.6092	-0.4090	213.2	-	-	19S	173W
-1712 Jan 08	15:18:04	39687	2611	-45912	-3	P	-t	0.7365	1.5472	0.4666	327.1	155.1	-	25N	62W
-1712 Jul 03	03:28:24	39676	2609	-45906	2	P	-a	-0.6728	1.5962	0.6503	286.3	160.1	-	24S	112E
-1712 Dec 27	15:01:50	39665	2607	-45900	7	T+	pp	0.0513	2.8152	1.7133	378.6	235.0	104.4	24N	59W
-1711 Jun 22	20:30:25	39654	2606	-45894	12	T+	pp	0.0569	2.7298	1.7769	321.5	213.2	99.3	23S	145W
-1711 Dec 16	15:50:54	39643	2604	-45888	17	P	a-	-0.6327	1.7329	0.6617	333.1	176.5	-	22N	73W
-1710 Jun 12	10:22:58	39632	2602	-45882	22	P	t-	0.8410	1.3134	0.3165	287.3	124.0	-	21S	7E
-1710 Nov 06	11:10:28	39623	2601	-45877	-11	N	-a	1.4737	0.1491	-0.8411	104.4	-	-	13N	5W
-1710 Dec 05	23:29:20	39621	2601	-45876	27	N	a-	-1.2770	0.5225	-0.4925	194.7	-	-	19N	172E
-1709 May 03	03:35:15	39612	2599	-45871	-6	N	-t	-1.1323	0.8129	-0.2516	259.2	-	-	11S	110E
-1709 Oct 27	02:28:03	39601	2597	-45865	-1	P	-a	0.8019	1.3721	0.4008	273.6	130.2	-	8N	126E
-1708 Apr 21	04:12:56	39590	2596	-45859	4	T	-t	-0.3728	2.2047	1.1439	360.1	217.5	59.8	6S	102E



-1708 Oct 15	17:17:38	39579	2594	-45853	9	T+	-p	0.1425	2.5955	1.5974	330.0	213.5	94.9	3N	96W
-1707 Apr 10	09:02:51	39568	2592	-45847	14	T	a-	0.4042	2.1246	1.1083	337.5	206.6	50.6	1S	30E
-1707 Oct 05	03:07:33	39558	2590	-45841	19	P	t-	-0.5772	1.8252	0.7730	330.9	184.4	-	2S	117E
-1706 Mar 01	12:53:03	39548	2589	-45836	-14	N	-a	-1.4304	0.2115	-0.7452	121.4	-	-	12N	24W
-1706 Mar 30	21:01:14	39547	2589	-45835	24	N	a-	1.1267	0.7737	-0.1925	224.1	-	-	3N	148W
-1706 Sep 24	05:46:29	39536	2587	-45829	29	N	t-	-1.3098	0.5021	-0.5919	211.3	-	-	7S	78E
-1705 Feb 19	05:31:10	39527	2586	-45824	-4	P	-a	-0.7377	1.4841	0.5244	281.8	147.1	-	16N	87E
-1705 Aug 14	12:54:15	39516	2584	-45818	1	P	-t	0.9412	1.1602	0.1022	291.5	76.0	-	18S	28W
-1704 Feb 08	19:42:11	39505	2582	-45812	6	T-	pp	-0.0312	2.8028	1.7986	338.5	219.5	101.1	19N	126W
-1704 Aug 02	20:41:52	39494	2580	-45806	11	T+	pp	0.1632	2.5580	1.5588	336.5	217.2	95.3	21S	146W
-1703 Jan 28	03:20:33	39483	2579	-45800	16	P	t-	0.7229	1.5637	0.4999	323.5	158.1	-	22N	119E
-1703 Jul 23	11:04:17	39472	2577	-45794	21	P	a-	-0.5675	1.7938	0.8391	298.0	176.9	-	24S	2W
-1703 Dec 18	09:28:51	39463	2575	-45789	-12	N	-t	-1.5764	0.0157	-1.0835	39.1	-	-	21N	22E
-1702 Jan 17	04:10:56	39461	2575	-45788	26	N	t-	1.4471	0.2517	-0.8452	154.0	-	-	25N	105E
-1702 Jun 13	20:26:32	39452	2574	-45783	-7	N	-a	1.2553	0.5354	-0.4262	190.5	-	-	20S	144W
-1702 Jul 13	03:58:43	39451	2573	-45782	31	N	a-	-1.2766	0.4909	-0.4600	179.8	-	-	25S	104E
-1702 Dec 07	11:53:35	39441	2572	-45777	-2	P	-h	-0.8489	1.3288	0.2725	300.1	118.6	-	20N	15W
-1701 Jun 03	08:44:32	39431	2570	-45771	3	P	-h	0.5362	1.8801	0.8682	327.2	190.9	-	19S	31E
-1701 Nov 26	21:31:51	39420	2569	-45765	8	T-	-p	-0.1227	2.6332	1.6325	330.7	214.0	96.0	18N	161W
-1700 May 22	13:53:08	39409	2567	-45759	13	T-	pp	-0.2409	2.4452	1.3870	365.7	227.4	89.9	17S	47W
-1700 Nov 15	12:14:54	39398	2565	-45753	18	P	a-	0.5441	1.8458	0.8734	299.5	178.0	-	15N	22W

# 17TH CENTURY BCE

**In the 17th century BCE the total number of lunar eclipses was 244 lunar eclipses: 90 penumbral lunar eclipses, 87 partial lunar eclipses, 67 total lunar eclipses (46 central total lunar eclipses, 21 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															

-1699 May 11	14:35:11	39387	2563	-45747	23	Nx	t-	-1.0064	1.0440	-0.0206	287.0	-	-	14S	57W
-1699 Oct 06	15:27:57	39378	2562	-45742	-10	N	-a	-1.5259	0.0639	-0.9472	71.0	-	-	2S	68W
-1699 Nov 05	03:31:37	39376	2562	-45741	28	N	a-	1.2173	0.6194	-0.3704	203.6	-	-	12N	108E
-1698 Apr 01	07:13:53	39367	2560	-45736	-5	P	-t	0.9727	1.0743	0.0723	267.5	61.4	-	3N	58E
-1698 Sep 25	23:21:36	39356	2558	-45730	0	P	-h	-0.8934	1.2520	0.1861	298.9	100.8	-	6S	174E
-1697 Mar 21	20:46:18	39345	2557	-45724	5	T+	-p	0.1909	2.4864	1.5287	320.0	209.8	91.6	6N	144W
-1697 Sep 15	00:28:36	39335	2555	-45718	10	T-	pp	-0.2059	2.5286	1.4324	374.8	230.2	93.2	9S	157E
-1696 Mar 10	13:33:03	39324	2553	-45712	15	P	a-	-0.5313	1.8580	0.9077	299.0	181.0	-	9N	36W
-1696 Sep 03	00:25:47	39313	2552	-45706	20	P	t-	0.4990	1.9802	0.9052	350.4	200.7	-	13S	158E
-1695 Jan 29	17:38:27	39304	2550	-45701	-13	N	-a	1.4225	0.2597	-0.7638	143.9	-	-	23N	96W
-1695 Feb 28	04:54:39	39302	2550	-45700	25	N	a-	-1.2821	0.4986	-0.4876	188.0	-	-	12N	94E
-1695 Jul 24	19:30:28	39293	2548	-45695	-8	N	-a	-1.4875	0.1194	-0.8623	95.0	-	-	24S	129W
-1695 Aug 23	06:16:32	39291	2548	-45694	30	N	a-	1.1868	0.6896	-0.3286	224.3	-	-	16S	70E
-1694 Jan 18	23:02:55	39282	2547	-45689	-3	P	-t	0.7606	1.5026	0.4228	324.7	149.0	-	24N	178W
-1694 Jul 14	11:07:26	39271	2545	-45683	2	P	-a	-0.7331	1.4863	0.5388	279.9	148.2	-	25S	4W
-1693 Jan 07	22:46:45	39260	2543	-45677	7	T+	pp	0.0680	2.7829	1.6842	377.8	234.7	103.9	24N	176W
-1693 Jul 04	03:58:34	39250	2542	-45671	12	T-	pp	-0.0104	2.8171	1.8603	322.7	213.8	100.0	24S	102E
-1693 Dec 27	23:58:42	39239	2540	-45665	17	P	a-	-0.6230	1.7482	0.6820	332.6	178.2	-	23N	165E
-1692 Jun 22	17:25:19	39228	2538	-45659	22	P	t-	0.7702	1.4459	0.4438	298.3	144.6	-	22S	100W
-1692 Nov 16	19:59:26	39219	2537	-45654	-11	N	-a	1.4691	0.1565	-0.8319	106.7	-	-	17N	139W
-1692 Dec 16	08:04:52	39217	2536	-45653	27	N	a-	-1.2710	0.5313	-0.4794	195.4	-	-	21N	42E
-1691 May 13	09:53:54	39208	2535	-45648	-6	N	-t	-1.2197	0.6530	-0.4122	236.4	-	-	15S	13E
-1691 Nov 06	11:20:26	39197	2533	-45642	-1	P	-a	0.8026	1.3714	0.3989	273.7	129.9	-	13N	9W
-1690 May 02	10:38:53	39186	2532	-45636	4	P	-t	-0.4559	2.0505	0.9928	353.7	208.2	-	10S	2E
-1690 Oct 27	01:56:50	39175	2530	-45630	9	T+	-p	0.1458	2.5915	1.5895	331.1	213.8	94.7	8N	132E
-1689 Apr 21	15:59:04	39165	2528	-45624	14	T	a-	0.3284	2.2609	1.2498	339.8	212.6	73.2	6S	77W
-1689 Oct 16	11:20:21	39154	2526	-45618	19	P	t-	-0.5710	1.8393	0.7818	333.0	185.7	-	3N	8W
-1688 Mar 11	20:41:50	39145	2525	-45613	-14	N	-a	-1.4781	0.1219	-0.8306	92.7	-	-	8N	144W
-1688 Apr 10	04:25:24	39143	2525	-45612	24	N	a-	1.0579	0.8976	-0.0641	237.5	-	-	1S	98E
-1688 Oct 04	13:32:20	39132	2523	-45606	29	N	t-	-1.2950	0.5314	-0.5667	217.3	-	-	2S	40W
-1687 Mar 01	13:28:09	39123	2522	-45601	-4	P	-a	-0.7840	1.3984	0.4401	276.6	136.7	-	12N	35W
-1687 Aug 24	20:20:36	39112	2520	-45595	1	P	-t	0.9799	1.0896	0.0311	283.9	42.2	-	15S	142W
-1686 Feb 19	03:31:18	39101	2518	-45589	6	T-	pp	-0.0715	2.7289	1.7247	339.3	219.8	100.4	16N	115E
-1686 Aug 14	04:25:31	39091	2516	-45583	11	T+	pp	0.2080	2.4759	1.4769	334.3	214.7	90.8	19S	97E
-1685 Feb 08	10:54:02	39080	2515	-45577	16	P	t-	0.6896	1.6245	0.5614	328.1	166.4	-	20N	4E
-1685 Aug 03	18:54:28	39069	2513	-45571	21	P	a-	-0.5154	1.8902	0.9341	301.7	183.3	-	22S	120W
-1684 Jan 28	11:39:15	39058	2511	-45565	26	N	t-	1.4183	0.3028	-0.7908	168.0	-	-	23N	8W
-1684 Jun 24	03:45:42	39049	2510	-45560	-7	N	-a	1.3282	0.4037	-0.5622	168.2	-	-	22S	104E
-1684 Jul 23	11:40:30	39047	2510	-45559	31	N	a-	-1.2225	0.5921	-0.3629	196.0	-	-	24S	13W

-1684 Dec 17	20:12:47	39038	2508	-45554	-2	P	-h	-0.8508	1.3229	0.2713	298.4	118.0	-	22N	140W
-1683 Jun 13	15:34:50	39027	2506	-45548	3	P	-h	0.6176	1.7331	0.7164	321.6	178.6	-	21S	73W
-1683 Dec 07	06:16:02	39017	2505	-45542	8	T-	-p	-0.1226	2.6316	1.6343	329.6	213.6	96.0	21N	67E
-1682 Jun 02	20:15:38	39006	2503	-45536	13	T-	pp	-0.1536	2.6067	1.5460	369.2	231.9	100.0	20S	144W
-1682 Nov 26	21:08:55	38995	2501	-45530	18	P	a-	0.5439	1.8459	0.8740	299.4	178.0	-	19N	157W
-1681 May 22	20:54:16	38984	2500	-45524	23	P	t-	-0.9176	1.2062	0.1430	302.7	91.3	-	17S	154W
-1681 Oct 17	23:57:47	38975	2498	-45519	-10	N	-a	-1.5371	0.0458	-0.9704	60.4	-	-	3N	162E
-1681 Nov 16	12:19:51	38973	2498	-45518	28	N	a-	1.2203	0.6150	-0.3773	203.5	-	-	16N	25W
-1680 Apr 11	14:21:20	38964	2496	-45513	-5	N	-t	1.0392	0.9494	-0.0470	253.6	-	-	2S	52W
-1680 Oct 06	07:20:59	38954	2495	-45507	0	P	-h	-0.9104	1.2235	0.1521	297.6	91.8	-	1S	52E
-1679 Apr 01	04:20:24	38943	2493	-45501	5	T+	-p	0.2534	2.3696	1.4160	317.1	206.7	84.8	2N	99E
-1679 Sep 25	08:04:42	38932	2491	-45495	10	T-	pp	-0.2302	2.4858	1.3861	374.6	228.9	89.7	5S	41E
-1678 Mar 21	21:17:40	38921	2490	-45489	15	T	a-	-0.4748	1.9608	1.0122	303.1	187.8	16.4	5N	154W
-1678 Sep 14	08:03:30	38910	2488	-45483	20	P	t-	0.4686	2.0364	0.9605	352.0	204.2	-	9S	41E
-1677 Feb 10	01:29:26	38901	2487	-45478	-13	N	-a	1.4601	0.1908	-0.8328	124.5	-	-	20N	145E
-1677 Mar 11	12:33:58	38900	2486	-45477	25	N	a-	-1.2358	0.5837	-0.4027	202.4	-	-	9N	23W
-1677 Aug 05	03:11:58	38891	2485	-45472	-8	Ne	-a	-1.5318	0.0382	-0.9435	54.0	-	-	23S	115E
-1677 Sep 03	14:10:16	38889	2485	-45471	30	N	a-	1.1502	0.7568	-0.2613	232.6	-	-	12S	50W
-1676 Jan 30	06:37:25	38880	2483	-45466	-3	P	-t	0.7926	1.4434	0.3648	321.0	139.9	-	22N	67E
-1676 Jul 24	18:53:15	38869	2481	-45460	2	P	-a	-0.7882	1.3863	0.4368	273.5	135.4	-	24S	121W
-1675 Jan 18	06:21:44	38858	2480	-45454	7	T+	pp	0.0930	2.7351	1.6404	376.8	234.2	103.0	23N	70E
-1675 Jul 14	11:31:57	38847	2478	-45448	12	T-	pp	-0.0727	2.7050	1.7438	323.5	213.6	98.9	24S	12W
-1674 Jan 07	08:00:08	38837	2476	-45442	17	P	a-	-0.6072	1.7745	0.7139	332.5	180.8	-	23N	44E
-1674 Jul 04	00:30:49	38826	2475	-45436	22	P	t-	0.7030	1.5721	0.5643	307.9	160.5	-	23S	152E
-1674 Nov 28	04:48:44	38817	2473	-45431	-11	N	-a	1.4650	0.1629	-0.8232	108.5	-	-	20N	88E
-1674 Dec 27	16:36:29	38815	2473	-45430	27	N	a-	-1.2613	0.5467	-0.4591	197.2	-	-	22N	86W
-1673 May 24	16:11:02	38806	2472	-45425	-6	N	-t	-1.3074	0.4925	-0.5738	208.7	-	-	18S	84W
-1673 Jun 23	06:32:57	38804	2471	-45424	32	N	t-	1.5145	0.1076	-0.9487	99.5	-	-	22S	61E
-1673 Nov 17	20:15:23	38795	2470	-45419	-1	P	-a	0.8012	1.3743	0.4012	274.1	130.3	-	16N	145W
-1672 May 12	17:01:30	38784	2468	-45413	4	P	-t	-0.5422	1.8907	0.8358	345.9	196.2	-	14S	96W
-1672 Nov 06	10:39:52	38774	2466	-45407	9	T+	-p	0.1451	2.5945	1.5890	332.4	214.2	94.8	12N	1W
-1671 May 01	22:52:27	38763	2465	-45401	14	T+	p-	0.2492	2.4039	1.3976	341.4	217.3	87.3	10S	177E
-1671 Oct 26	19:37:13	38752	2463	-45395	19	P	t-	-0.5689	1.8454	0.7833	334.7	186.3	-	7N	135W
-1670 Mar 23	04:24:41	38743	2462	-45390	-14	Ne	-a	-1.5309	0.0233	-0.9256	40.8	-	-	4N	98E
-1670 Apr 21	11:47:06	38741	2461	-45389	24	P	a-	0.9864	1.0267	0.0690	249.7	57.7	-	5S	15W
-1670 Oct 15	21:24:19	38731	2460	-45383	29	N	t-	-1.2851	0.5513	-0.5502	221.3	-	-	2N	161W
-1669 Mar 12	21:18:30	38722	2458	-45378	-4	P	-a	-0.8354	1.3035	0.3465	270.4	123.2	-	8N	155W
-1669 Sep 05	03:55:48	38711	2457	-45372	1	Nx	-t	1.0118	1.0312	-0.0278	277.1	-	-	12S	103E
-1668 Mar 01	11:12:01	38700	2455	-45366	6	T-	-p	-0.1177	2.6443	1.6399	339.8	219.6	98.7	13N	2W
-1668 Aug 24	12:18:22	38689	2453	-45360	11	T+	-p	0.2455	2.4071	1.4079	332.0	212.1	86.0	16S	23W

-1667 Feb 18	18:15:45	38678	2451	-45354	16	P	t-	0.6477	1.7010	0.6386	333.4	175.7	-	17N	108W
-1667 Aug 14	02:53:50	38668	2450	-45348	21	T	a-	-0.4709	1.9728	1.0148	304.6	188.0	18.1	20S	118E
-1666 Feb 07	18:56:54	38657	2448	-45342	26	N	t-	1.3814	0.3688	-0.7213	184.2	-	-	21N	118W
-1666 Jul 05	11:09:42	38648	2447	-45337	-7	N	-a	1.3964	0.2810	-0.6896	142.4	-	-	22S	8W
-1666 Aug 03	19:29:46	38646	2446	-45336	31	N	a-	-1.1751	0.6813	-0.2780	208.9	-	-	23S	131W
-1666 Dec 29	04:26:35	38637	2445	-45331	-2	P	-h	-0.8575	1.3079	0.2616	295.9	115.7	-	23N	96E
-1665 Jun 24	22:27:57	38626	2443	-45325	3	P	-h	0.6953	1.5933	0.5714	315.2	163.9	-	23S	178W
-1665 Dec 18	14:56:49	38616	2442	-45319	8	T-	-p	-0.1259	2.6237	1.6303	328.4	213.1	95.7	23N	63W
-1664 Jun 13	02:37:53	38605	2440	-45313	13	T-	pp	-0.0668	2.7675	1.7038	371.6	234.5	105.2	22S	119E
-1664 Dec 07	06:01:23	38594	2438	-45307	18	P	a-	0.5426	1.8477	0.8768	299.4	178.2	-	21N	69E
-1663 Jun 02	03:13:57	38583	2437	-45301	23	P	t-	-0.8288	1.3687	0.3064	316.1	130.3	-	20S	109E
-1663 Oct 28	08:31:53	38574	2435	-45296	-10	N	-a	-1.5442	0.0350	-0.9855	53.0	-	-	7N	31E
-1663 Nov 26	21:07:19	38573	2435	-45295	28	N	a-	1.2237	0.6098	-0.3844	203.3	-	-	20N	158W
-1662 Apr 22	21:25:32	38564	2433	-45290	-5	N	-h	1.1089	0.8190	-0.1723	237.7	-	-	6S	160W
-1662 May 22	07:37:03	38562	2433	-45289	33	Nb	h-	-1.5446	0.0329	-0.9851	53.1	-	-	18S	43E
-1662 Oct 17	15:26:47	38553	2432	-45284	0	P	-h	-0.9210	1.2065	0.1303	297.2	85.4	-	3N	72W
-1661 Apr 12	11:49:33	38542	2430	-45278	5	T	-p	0.3205	2.2445	1.2946	313.5	202.4	74.5	2S	16W
-1661 Oct 06	15:48:29	38531	2428	-45272	10	T-	-p	-0.2480	2.4547	1.3520	374.4	227.8	86.8	1S	77W
-1660 Apr 01	04:55:31	38521	2427	-45266	15	T	a-	-0.4130	2.0736	1.1262	307.2	194.2	51.2	1N	88E
-1660 Sep 24	15:51:13	38510	2425	-45260	20	T	t-	0.4455	2.0792	1.0027	352.8	206.5	8.4	5S	78W
-1659 Feb 20	09:09:41	38501	2424	-45255	-13	N	-a	1.5053	0.1079	-0.9157	94.7	-	-	17N	29E
-1659 Mar 21	20:03:36	38499	2423	-45254	25	N	a-	-1.1824	0.6819	-0.3050	217.4	-	-	5N	138W
-1659 Sep 13	22:14:35	38489	2422	-45248	30	N	a-	1.1212	0.8098	-0.2081	238.5	-	-	8S	173W
-1658 Feb 09	14:02:20	38479	2420	-45243	-3	P	-t	0.8317	1.3709	0.2938	315.9	127.2	-	20N	45W
-1658 Aug 05	02:46:17	38469	2419	-45237	2	P	-a	-0.8373	1.2974	0.3456	267.3	122.0	-	22S	119E
-1657 Jan 29	13:49:56	38458	2417	-45231	7	T+	pp	0.1237	2.6766	1.5861	375.4	233.3	101.2	22N	43W
-1657 Jul 25	19:10:51	38447	2415	-45225	12	T-	-p	-0.1298	2.6027	1.6365	323.9	212.7	96.3	23S	128W
-1656 Jan 18	15:55:41	38437	2414	-45219	17	P	a-	-0.5858	1.8107	0.7561	332.9	184.2	-	23N	75W
-1656 Jul 14	07:39:36	38426	2412	-45213	22	P	t-	0.6393	1.6919	0.6781	316.4	173.3	-	23S	44E
-1656 Dec 08	13:36:22	38417	2411	-45208	-11	N	-a	1.4628	0.1655	-0.8178	109.1	-	-	23N	45W
-1655 Jan 07	01:02:39	38415	2410	-45207	27	N	a-	-1.2465	0.5712	-0.4294	200.3	-	-	23N	146E
-1655 Jun 03	22:29:04	38406	2409	-45202	-6	N	-t	-1.3935	0.3353	-0.7326	175.0	-	-	21S	180E
-1655 Jul 03	13:09:14	38404	2409	-45201	32	N	t-	1.4432	0.2407	-0.8201	147.6	-	-	22S	39W
-1655 Nov 28	05:08:14	38395	2407	-45196	-1	P	-a	0.8016	1.3737	0.4003	274.3	130.3	-	20N	81E
-1654 May 23	23:26:54	38385	2405	-45190	4	P	-t	-0.6268	1.7345	0.6819	336.9	181.6	-	18S	166E
-1654 Nov 17	19:22:48	38374	2404	-45184	9	T+	-p	0.1442	2.5976	1.5891	333.5	214.7	95.0	16N	133W
-1653 May 13	05:46:12	38363	2402	-45178	14	T+	pp	0.1691	2.5487	1.5466	342.1	220.4	96.1	14S	71E
-1653 Nov 07	03:55:55	38352	2400	-45172	19	P	t-	-0.5691	1.8470	0.7811	336.1	186.6	-	11N	99E
-1652 May 01	19:05:41	38342	2399	-45166	24	P	a-	0.9115	1.1626	0.2082	261.0	98.1	-	9S	127W
-1652 Oct 26	05:21:28	38331	2397	-45160	29	N	t-	-1.2796	0.5626	-0.5415	223.7	-	-	7N	78E

-1651 Mar 23	04:58:24	38322	2396	-45155	-4	P	-a	-0.8948	1.1941	0.2378	262.5	103.9	-	4N	88E
-1651 Sep 15	11:43:17	38311	2394	-45149	1	N	-t	1.0345	0.9898	-0.0695	271.9	-	-	8S	16W
-1650 Mar 12	18:41:39	38301	2392	-45143	6	T-	-p	-0.1720	2.5449	1.5401	339.9	218.6	95.1	9N	117W
-1650 Sep 04	20:21:11	38290	2391	-45137	11	T	-p	0.2755	2.3521	1.3529	329.9	209.8	81.4	13S	145W
-1649 Mar 02	01:27:15	38279	2389	-45131	16	P	t-	0.5982	1.7914	0.7298	339.2	185.4	-	13N	142E
-1649 Aug 25	11:01:21	38269	2387	-45125	21	T	a-	-0.4331	2.0430	1.0831	306.8	191.6	42.0	17S	5W
-1648 Feb 19	02:05:08	38258	2386	-45119	26	N	t-	1.3365	0.4492	-0.6370	201.5	-	-	18N	133E
-1648 Jul 15	18:36:26	38249	2384	-45114	-7	N	-a	1.4614	0.1644	-0.8116	110.6	-	-	22S	120W
-1648 Aug 14	03:25:16	38247	2384	-45113	31	N	a-	-1.1332	0.7606	-0.2035	219.6	-	-	20S	109E
-1647 Jan 08	12:36:14	38238	2383	-45108	-2	P	-h	-0.8685	1.2849	0.2444	292.7	111.8	-	23N	27W
-1647 Jul 05	05:23:28	38227	2381	-45102	3	P	-h	0.7697	1.4596	0.4320	308.1	146.1	-	23S	77E
-1647 Dec 28	23:33:24	38217	2379	-45096	8	T-	-p	-0.1331	2.6082	1.6191	327.1	212.6	95.3	24N	167E
-1646 Jun 24	09:04:11	38206	2378	-45090	13	T+	pp	0.0162	2.8620	1.7951	372.9	235.3	106.3	23S	21E
-1646 Dec 18	14:51:09	38195	2376	-45084	18	P	a-	0.5394	1.8528	0.8833	299.5	178.7	-	23N	64W
-1645 Jun 13	09:37:13	38185	2374	-45078	23	P	t-	-0.7419	1.5277	0.4661	327.3	156.6	-	22S	12E
-1645 Nov 08	17:07:30	38176	2373	-45073	-10	N	-a	-1.5495	0.0273	-0.9971	47.0	-	-	11N	99W
-1645 Dec 08	05:52:42	38174	2373	-45072	28	N	a-	1.2260	0.6063	-0.3894	203.3	-	-	22N	69E
-1644 May 03	04:28:51	38165	2371	-45067	-5	N	-h	1.1798	0.6865	-0.3003	219.5	-	-	10S	91E
-1644 Jun 01	14:24:27	38163	2371	-45066	33	N	h-	-1.4613	0.1842	-0.8306	123.4	-	-	21S	60W
-1644 Oct 27	23:35:28	38154	2370	-45061	0	P	-h	-0.9289	1.1941	0.1137	297.1	80.2	-	8N	163E
-1643 Apr 22	19:14:57	38144	2368	-45055	5	T	-p	0.3914	2.1131	1.1662	309.3	196.7	58.3	6S	130W
-1643 Oct 16	23:39:05	38133	2366	-45049	10	T-	-p	-0.2603	2.4333	1.3283	374.2	227.0	84.6	4N	163E
-1642 Apr 12	12:27:51	38122	2365	-45043	15	T	p-	-0.3467	2.1950	1.2482	311.0	200.0	69.3	3S	27W
-1642 Oct 05	23:46:53	38112	2363	-45037	20	T	h-	0.4281	2.1112	1.0346	353.2	207.9	29.8	0S	161E
-1641 Mar 03	16:39:14	38103	2361	-45032	-13	Ne	-h	1.5582	0.0110	-1.0129	30.6	-	-	14N	86W
-1641 Apr 02	03:25:11	38101	2361	-45031	25	N	h-	-1.1231	0.7911	-0.1967	232.4	-	-	0N	109E
-1641 Sep 25	06:28:10	38090	2360	-45025	30	N	a-	1.0990	0.8504	-0.1672	242.7	-	-	4S	61E
-1640 Feb 20	21:14:50	38081	2358	-45020	-3	P	-t	0.8801	1.2812	0.2056	308.9	108.0	-	17N	155W
-1640 Aug 15	10:47:23	38071	2356	-45014	2	P	-a	-0.8799	1.2207	0.2661	261.6	108.3	-	20S	2W
-1639 Feb 08	21:07:12	38060	2355	-45008	7	T+	pp	0.1637	2.6008	1.5151	373.6	231.8	98.1	19N	153W
-1639 Aug 05	02:56:34	38049	2353	-45002	12	T-	-p	-0.1806	2.5121	1.5407	324.1	211.4	92.6	21S	115E
-1638 Jan 28	23:42:45	38039	2352	-44996	17	P	a-	-0.5565	1.8613	0.8131	333.7	188.7	-	21N	167E
-1638 Jul 25	14:54:19	38028	2350	-44990	22	P	t-	0.5813	1.8016	0.7814	323.7	183.4	-	22S	65W
-1638 Dec 19	22:21:51	38019	2348	-44985	-11	N	-a	1.4632	0.1632	-0.8168	108.1	-	-	24N	177W
-1637 Jan 18	09:23:21	38017	2348	-44984	27	N	a-	-1.2267	0.6048	-0.3903	204.6	-	-	22N	21E
-1637 Jun 15	04:47:27	38008	2347	-44979	-6	N	-t	-1.4786	0.1801	-0.8896	130.2	-	-	23S	84E
-1637 Jul 14	19:48:43	38007	2347	-44978	32	N	t-	1.3744	0.3694	-0.6962	181.3	-	-	23S	140W
-1637 Dec 09	14:00:40	37998	2345	-44973	-1	P	-a	0.8024	1.3723	0.3990	274.4	130.2	-	22N	53W
-1636 Jun 03	05:53:00	37987	2343	-44967	4	P	-t	-0.7114	1.5782	0.5276	326.6	163.4	-	20S	67E
-1636 Nov 28	04:05:26	37976	2342	-44961	9	T+	-p	0.1427	2.6015	1.5907	334.7	215.3	95.2	19N	95E

-1635 May 23	12:40:37	37966	2340	-44955	14	T+	pp	0.0887	2.6944	1.6960	342.0	222.0	101.1	17S	34W
-1635 Nov 17	12:15:50	37955	2339	-44949	19	P	t-	-0.5709	1.8453	0.7762	337.2	186.7	-	15N	28W
-1634 May 13	02:24:30	37944	2337	-44943	24	P	a-	0.8363	1.2992	0.3476	270.9	123.9	-	13S	120E
-1634 Nov 06	13:20:51	37934	2335	-44937	29	N	t-	-1.2760	0.5701	-0.5358	225.3	-	-	11N	44W
-1633 Apr 03	12:33:25	37925	2334	-44932	-4	P	-a	-0.9578	1.0784	0.1224	253.2	75.9	-	0S	29W
-1633 Sep 26	19:39:09	37914	2332	-44926	1	N	-t	1.0510	0.9595	-0.0998	267.8	-	-	4S	137W
-1632 Mar 23	02:02:11	37903	2331	-44920	6	T-	-p	-0.2328	2.4336	1.4280	339.4	216.6	88.9	5N	130E
-1632 Sep 15	04:33:19	37893	2329	-44914	11	T	-p	0.2984	2.3101	1.3108	328.1	207.7	77.3	8S	90E
-1631 Mar 12	08:27:58	37882	2327	-44908	16	P	t-	0.5406	1.8969	0.8359	345.1	195.3	-	10N	35E
-1631 Sep 04	19:17:51	37871	2326	-44902	21	T	p-	-0.4027	2.0999	1.1378	308.5	194.1	53.1	13S	131W
-1630 Mar 01	09:03:18	37861	2324	-44896	26	N	t-	1.2833	0.5448	-0.5375	219.6	-	-	14N	27E
-1630 Jul 27	02:10:41	37852	2323	-44891	-7	Ne	-a	1.5195	0.0607	-0.9209	68.1	-	-	21S	125E
-1630 Aug 25	11:29:40	37850	2322	-44890	31	N	a-	-1.0990	0.8258	-0.1431	227.9	-	-	17S	14W
-1629 Jan 19	20:38:56	37841	2321	-44885	-2	P	-h	-0.8856	1.2503	0.2160	288.5	105.2	-	22N	149W
-1629 Jul 16	12:23:17	37831	2319	-44879	3	P	-h	0.8393	1.3350	0.3013	300.3	124.9	-	23S	29W
-1628 Jan 09	08:04:28	37820	2318	-44873	8	T-	-p	-0.1453	2.5834	1.5990	325.7	211.9	94.5	24N	39E
-1628 Jul 04	15:34:28	37809	2316	-44867	13	T+	pp	0.0952	2.7190	1.6484	373.1	234.4	103.9	24S	78W
-1628 Dec 28	23:35:10	37799	2314	-44861	18	P	a-	0.5317	1.8662	0.8985	300.0	179.8	-	24N	165E
-1627 Jun 23	16:05:33	37788	2313	-44855	23	P	t-	-0.6585	1.6807	0.6193	336.4	175.7	-	24S	86W
-1627 Nov 19	01:44:25	37779	2311	-44850	-10	N	-a	-1.5530	0.0224	-1.0051	42.8	-	-	15N	130E
-1627 Dec 18	14:34:09	37777	2311	-44849	28	N	a-	1.2262	0.6063	-0.3903	203.8	-	-	24N	61W
-1626 May 14	11:32:00	37768	2310	-44844	-5	N	-h	1.2517	0.5526	-0.4303	198.7	-	-	13S	17W
-1626 Jun 12	21:16:11	37767	2309	-44843	33	N	h-	-1.3800	0.3322	-0.6802	162.8	-	-	23S	165W
-1626 Nov 08	07:46:55	37758	2308	-44838	0	P	-h	-0.9337	1.1870	0.1032	297.4	76.7	-	12N	39E
-1625 May 04	02:38:02	37747	2306	-44832	5	T	-a	0.4644	1.9778	1.0333	304.2	189.6	27.1	10S	117E
-1625 Oct 28	07:35:32	37737	2305	-44826	10	T-	-p	-0.2678	2.4204	1.3139	374.1	226.4	83.1	8N	41E
-1624 Apr 22	19:53:37	37726	2303	-44820	15	T	p-	-0.2753	2.3261	1.3793	314.6	205.0	82.0	7S	142W
-1624 Oct 16	07:51:17	37715	2301	-44814	20	T	a-	0.4171	2.1311	1.0549	352.9	208.6	37.3	4N	38E
-1623 Apr 12	10:39:04	37705	2300	-44808	25	N	h-	-1.0586	0.9103	-0.0789	247.2	-	-	4S	2W
-1623 Oct 05	14:50:01	37694	2298	-44802	30	N	a-	1.0829	0.8796	-0.1374	245.3	-	-	0N	67W
-1622 Mar 03	04:17:56	37685	2297	-44797	-3	P	-t	0.9354	1.1790	0.1050	300.1	78.4	-	13N	97E
-1622 Aug 26	18:56:41	37675	2295	-44791	2	P	-a	-0.9157	1.1563	0.1989	256.6	94.5	-	17S	126W
-1621 Feb 20	04:17:34	37664	2293	-44785	7	T+	pp	0.2097	2.5140	1.4331	371.2	229.6	93.2	16N	98E
-1621 Aug 16	10:48:10	37653	2292	-44779	12	T-	-p	-0.2259	2.4319	1.4549	324.2	209.8	88.0	19S	4W
-1620 Feb 09	07:23:41	37643	2290	-44773	17	P	a-	-0.5211	1.9229	0.8814	334.9	193.5	-	19N	51E
-1620 Aug 04	22:14:55	37632	2289	-44767	22	P	t-	0.5288	1.9012	0.8744	329.9	191.5	-	21S	177W
-1620 Dec 30	07:01:20	37623	2287	-44762	-11	N	-a	1.4688	0.1510	-0.8254	103.9	-	-	25N	53E
-1619 Jan 28	17:35:37	37621	2287	-44761	27	N	a-	-1.1993	0.6522	-0.3372	210.7	-	-	20N	103W
-1619 Jun 25	11:10:59	37613	2285	-44756	-6	Ne	-t	-1.5588	0.0341	-1.0378	57.5	-	-	25S	13W
-1619 Jul 25	02:36:00	37611	2285	-44755	32	N	t-	1.3118	0.4867	-0.5839	206.5	-	-	22S	117E

-1619 Dec 19	22:48:05	37602	2284	-44750	-1	P	-a	0.8075	1.3626	0.3899	273.9	129.0	-	24N	175E
-1618 Jun 14	12:24:51	37591	2282	-44744	4	P	-t	-0.7917	1.4301	0.3809	315.4	141.7	-	23S	32W
-1618 Dec 09	12:44:00	37581	2281	-44738	9	T+	-p	0.1441	2.5999	1.5872	335.8	215.8	95.3	22N	35W
-1617 Jun 03	19:38:38	37570	2279	-44732	14	T+	pp	0.0100	2.8373	1.8419	341.0	222.1	102.7	20S	141W
-1617 Nov 28	20:33:56	37559	2277	-44726	19	P	t-	-0.5721	1.8444	0.7728	338.3	186.9	-	18N	154W
-1616 May 23	09:41:51	37549	2276	-44720	24	P	a-	0.7591	1.4397	0.4900	279.8	143.7	-	16S	9E
-1616 Nov 16	21:22:41	37538	2274	-44714	29	N	t-	-1.2744	0.5735	-0.5333	226.1	-	-	14N	166W
-1615 Apr 13	20:00:08	37529	2273	-44709	-4	N	-a	-1.0271	0.9513	-0.0050	241.6	-	-	4S	143W
-1615 May 13	02:56:17	37528	2272	-44708	34	N	a-	1.4721	0.1272	-0.8141	94.3	-	-	12S	111E
-1615 Oct 07	03:44:51	37519	2271	-44703	1	N	-t	1.0604	0.9420	-0.1168	265.1	-	-	1N	99E
-1614 Apr 03	09:13:23	37508	2269	-44697	6	T	-a	-0.3005	2.3101	1.3033	338.1	213.2	78.6	0N	20E
-1614 Sep 26	12:55:09	37498	2268	-44691	11	T	-p	0.3142	2.2811	1.2818	326.5	206.0	74.2	4S	38W
-1613 Mar 23	15:19:12	37487	2266	-44685	16	P	t-	0.4758	2.0154	0.9551	351.0	204.8	-	5N	70W
-1613 Sep 16	03:42:08	37476	2264	-44679	21	T	p-	-0.3788	2.1449	1.1806	309.7	195.9	59.9	9S	101E
-1612 Mar 11	15:53:23	37466	2263	-44673	26	N	t-	1.2232	0.6532	-0.4251	237.6	-	-	10N	78W
-1612 Sep 04	19:41:14	37455	2261	-44667	31	N	a-	-1.0715	0.8787	-0.0952	234.5	-	-	14S	138W
-1611 Jan 30	04:34:40	37446	2260	-44662	-2	P	-h	-0.9092	1.2038	0.1760	283.2	95.2	-	20N	92E
-1611 Jul 26	19:28:44	37436	2258	-44656	3	P	-h	0.9029	1.2214	0.1815	292.3	98.9	-	22S	136W
-1610 Jan 19	16:29:52	37425	2257	-44650	8	T-	-p	-0.1625	2.5495	1.5700	324.2	211.1	93.3	23N	88W
-1610 Jul 15	22:10:35	37415	2255	-44644	13	T+	pp	0.1689	2.5855	1.5111	372.5	232.2	98.4	24S	178W
-1609 Jan 09	08:13:49	37404	2253	-44638	18	P	a-	0.5198	1.8870	0.9212	300.8	181.4	-	24N	35E
-1609 Jul 04	22:40:31	37393	2252	-44632	23	P	t-	-0.5798	1.8251	0.7636	343.6	190.1	-	24S	174E
-1609 Nov 30	10:19:23	37384	2250	-44627	-10	N	-a	-1.5575	0.0154	-1.0148	35.7	-	-	18N	0W
-1609 Dec 29	23:09:52	37383	2250	-44626	28	N	a-	1.2225	0.6135	-0.3836	205.4	-	-	25N	169E
-1608 May 24	18:35:52	37374	2249	-44621	-5	N	-h	1.3237	0.4189	-0.5607	174.5	-	-	16S	125W
-1608 Jun 23	04:12:52	37372	2248	-44620	33	N	h-	-1.3012	0.4756	-0.5347	191.4	-	-	24S	90E
-1608 Nov 18	15:58:22	37363	2247	-44615	0	P	-h	-0.9378	1.1808	0.0944	297.7	73.6	-	15N	86W
-1607 May 14	10:00:09	37353	2245	-44609	5	P	-a	0.5386	1.8409	0.8981	298.4	180.9	-	14S	4E
-1607 Nov 07	15:34:05	37342	2244	-44603	10	T	-p	-0.2734	2.4104	1.3031	373.9	225.9	82.0	12N	80W
-1606 May 04	03:16:46	37332	2242	-44597	15	T-	p-	-0.2020	2.4608	1.5133	317.5	208.9	90.8	11S	105E
-1606 Oct 27	16:01:26	37321	2241	-44591	20	T	a-	0.4105	2.1427	1.0676	352.3	208.9	41.1	8N	87W
-1605 Apr 23	17:46:09	37310	2239	-44585	25	P	h-	-0.9891	1.0386	0.0475	261.5	49.6	-	8S	112W
-1605 Oct 16	23:18:59	37300	2237	-44579	30	N	a-	1.0720	0.8992	-0.1168	246.7	-	-	5N	164E
-1604 Mar 13	11:09:58	37291	2236	-44574	-3	Nx	-t	0.9989	1.0616	-0.0107	288.7	-	-	9N	8W
-1604 Sep 06	03:14:47	37280	2234	-44568	2	P	-a	-0.9446	1.1049	0.1444	252.4	81.1	-	13S	108E
-1603 Mar 02	11:16:44	37270	2233	-44562	7	T+	pp	0.2654	2.4093	1.3335	368.1	226.1	85.1	13N	9W
-1603 Aug 26	18:48:27	37259	2231	-44556	12	T-	-p	-0.2634	2.3660	1.3833	324.3	208.2	83.1	16S	126W
-1602 Feb 19	14:56:26	37249	2229	-44550	17	P	a-	-0.4777	1.9990	0.9642	336.4	198.8	-	16N	64W
-1602 Aug 16	05:42:02	37238	2228	-44544	22	P	t-	0.4825	1.9897	0.9561	335.3	197.9	-	18S	70E
-1601 Jan 10	15:36:11	37229	2227	-44539	-11	N	-a	1.4788	0.1307	-0.8418	96.6	-	-	25N	76W

-1601 Feb 09	01:41:41	37228	2226	-44538	27	N	a-	-1.1662	0.7100	-0.2736	217.7	-	-	18N	134E
-1601 Aug 05	09:29:38	37217	2225	-44532	32	N	t-	1.2541	0.5950	-0.4807	226.6	-	-	20S	13E
-1601 Dec 31	07:31:32	37208	2223	-44527	-1	P	-a	0.8156	1.3472	0.3754	273.1	127.0	-	25N	44E
-1600 Jun 24	19:00:21	37198	2222	-44521	4	P	-t	-0.8696	1.2868	0.2386	303.2	114.3	-	24S	132W
-1600 Dec 19	21:19:20	37187	2220	-44515	9	T+	-p	0.1475	2.5943	1.5803	336.8	216.2	95.3	23N	165W

# 16TH CENTURY BCE

In the 16th century BCE the total number of lunar eclipses was 226 lunar eclipses:  
85 penumbral lunar eclipses, 54 partial lunar eclipses, 87 total lunar eclipses  
(25 central total lunar eclipses, 62 non-central total lunar eclipses).

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-1599 Jun 14	02:40:47	37177	2218	-44509	14	T-	pp	-0.0662	2.7329	1.7399	339.2	220.9	101.4	22S	112E
-1599 Dec 09	04:48:50	37166	2217	-44503	19	P	t-	-0.5712	1.8469	0.7735	339.5	187.4	-	21N	82E
-1598 Jun 03	17:02:45	37156	2215	-44497	24	P	a-	0.6843	1.5763	0.6280	287.4	159.0	-	19S	103W
-1598 Nov 28	05:24:10	37145	2214	-44491	29	N	t-	-1.2723	0.5774	-0.5296	226.8	-	-	18N	72E
-1597 Apr 25	03:22:56	37136	2212	-44486	-4	N	-a	-1.0991	0.8198	-0.1375	228.0	-	-	9S	103E
-1597 May 24	10:18:33	37134	2212	-44485	34	N	a-	1.4022	0.2560	-0.6862	132.3	-	-	16S	2W
-1597 Oct 18	11:57:00	37126	2211	-44480	1	N	-h	1.0653	0.9325	-0.1253	263.1	-	-	5N	27W
-1596 Apr 13	16:17:50	37115	2209	-44474	6	T	-a	-0.3728	2.1782	1.1698	336.0	208.3	61.8	4S	89W
-1596 Oct 06	21:24:35	37104	2207	-44468	11	T	-p	0.3241	2.2628	1.2638	325.1	204.8	72.0	0N	168W
-1595 Apr 02	22:01:14	37094	2206	-44462	16	T	t-	0.4041	2.1469	1.0867	356.7	213.5	47.1	1N	174W
-1595 Sep 26	12:14:56	37083	2204	-44456	21	T	p-	-0.3619	2.1768	1.2106	310.6	197.1	64.0	5S	30W
-1594 Mar 22	22:35:27	37073	2203	-44450	26	N	t-	1.1562	0.7742	-0.3003	255.2	-	-	6N	179E
-1594 Sep 16	04:00:15	37062	2201	-44444	31	N	a-	-1.0507	0.9195	-0.0593	239.6	-	-	10S	95E
-1593 Feb 10	12:22:46	37053	2200	-44439	-2	P	-h	-0.9395	1.1447	0.1236	276.6	80.2	-	18N	27W
-1593 Aug 07	02:41:05	37043	2198	-44433	3	P	-h	0.9596	1.1207	0.0742	284.5	64.4	-	20S	114E



-1592 Jan 31	00:46:34	37032	2196	-44427	8	T-	-p	-0.1875	2.5010	1.5265	322.4	209.9	91.3	21N	147E
-1592 Jul 26	04:53:33	37022	2195	-44421	13	T+	pp	0.2368	2.4630	1.3845	371.3	228.9	90.0	22S	81E
-1591 Jan 19	16:44:31	37011	2193	-44415	18	P	a-	0.5014	1.9196	0.9561	302.1	183.8	-	23N	93W
-1591 Jul 15	05:23:39	37001	2192	-44409	23	P	t-	-0.5068	1.9594	0.8974	349.2	200.8	-	24S	72E
-1591 Dec 10	18:51:09	36992	2190	-44404	-10	N	-a	-1.5640	0.0046	-1.0276	19.5	-	-	20N	129W
-1590 Jan 09	07:38:11	36990	2190	-44403	28	N	a-	1.2135	0.6301	-0.3672	208.4	-	-	25N	42E
-1590 Jun 05	01:42:55	36982	2189	-44398	-5	N	-a	1.3938	0.2890	-0.6879	146.2	-	-	19S	126E
-1590 Jul 04	11:17:05	36980	2188	-44397	33	N	a-	-1.2272	0.6106	-0.3981	213.3	-	-	25S	17W
-1590 Nov 30	00:09:43	36971	2187	-44392	0	P	-t	-0.9413	1.1754	0.0872	297.9	71.0	-	18N	150E
-1589 May 25	17:21:15	36960	2185	-44386	5	P	-a	0.6139	1.7021	0.7604	291.7	170.2	-	17S	109W
-1589 Nov 18	23:36:00	36950	2184	-44380	10	T	-p	-0.2765	2.4047	1.2975	373.6	225.7	81.4	16N	158E
-1588 May 14	10:36:24	36939	2182	-44374	15	T-	pp	-0.1263	2.6004	1.6516	319.9	211.8	96.6	15S	7W
-1588 Nov 07	00:16:45	36929	2181	-44368	20	T	a-	0.4070	2.1482	1.0749	351.4	208.8	43.1	13N	147E
-1587 May 04	00:48:09	36918	2179	-44362	25	P	t-	-0.9162	1.1738	0.1801	275.1	95.2	-	12S	140E
-1587 Oct 27	07:54:09	36908	2177	-44356	30	N	a-	1.0654	0.9106	-0.1040	247.2	-	-	9N	33E
-1586 Mar 24	17:54:35	36899	2176	-44351	-3	N	-t	1.0680	0.9342	-0.1367	274.7	-	-	5N	112W
-1586 Sep 17	11:39:33	36889	2174	-44345	2	P	-a	-0.9683	1.0629	0.0993	248.9	67.7	-	9S	21W
-1585 Mar 13	18:10:13	36878	2173	-44339	7	T	-p	0.3262	2.2952	1.2242	364.2	221.5	72.6	9N	115W
-1585 Sep 07	02:55:27	36867	2171	-44333	12	T	-p	-0.2949	2.3111	1.3227	324.4	206.6	78.0	12S	110E
-1584 Mar 01	22:21:35	36857	2170	-44327	17	T	a-	-0.4270	2.0885	1.0605	337.9	204.1	38.4	12N	177W
-1584 Aug 26	13:16:44	36846	2168	-44321	22	T	t-	0.4431	2.0653	1.0249	339.9	202.9	25.0	15S	45W
-1583 Jan 21	00:03:16	36838	2167	-44316	-11	N	-a	1.4956	0.0978	-0.8706	83.6	-	-	24N	157E
-1583 Feb 19	09:39:13	36836	2166	-44315	27	N	a-	-1.1254	0.7819	-0.1959	225.9	-	-	15N	13E
-1583 Aug 15	16:32:34	36825	2165	-44309	32	N	t-	1.2040	0.6895	-0.3912	242.4	-	-	18S	94W
-1582 Jan 10	16:06:50	36817	2163	-44304	-1	P	-a	0.8306	1.3191	0.3485	271.4	123.0	-	25N	86W
-1582 Jul 06	01:45:08	36806	2162	-44298	4	P	-t	-0.9407	1.1559	0.1085	290.7	78.3	-	25S	126E
-1582 Dec 31	05:48:02	36796	2160	-44292	9	T+	-p	0.1560	2.5793	1.5644	337.8	216.6	94.9	24N	68E
-1581 Jun 25	09:48:02	36785	2159	-44286	14	T-	pp	-0.1394	2.5977	1.6066	336.8	218.6	97.6	23S	4E
-1581 Dec 20	12:59:06	36775	2157	-44280	19	P	t-	-0.5671	1.8549	0.7805	340.8	188.5	-	23N	41W
-1580 Jun 14	00:25:33	36764	2155	-44274	24	P	a-	0.6102	1.7120	0.7643	293.9	171.2	-	21S	144E
-1580 Dec 08	13:23:09	36754	2154	-44268	29	N	t-	-1.2682	0.5847	-0.5215	228.1	-	-	20N	49W
-1579 May 05	10:40:13	36745	2152	-44263	-4	N	-a	-1.1749	0.6814	-0.2774	211.4	-	-	13S	9W
-1579 Jun 03	17:40:34	36743	2152	-44262	34	N	a-	1.3321	0.3856	-0.5584	160.7	-	-	19S	114W
-1579 Oct 28	20:16:51	36734	2151	-44257	1	N	-h	1.0650	0.9322	-0.1240	262.2	-	-	10N	154W
-1578 Apr 24	23:15:20	36724	2149	-44251	6	T	-h	-0.4497	2.0382	1.0277	332.7	201.3	26.2	8S	164E
-1578 Oct 18	06:00:45	36713	2148	-44245	11	T	-p	0.3292	2.2531	1.2548	324.0	203.9	70.8	5N	61E
-1577 Apr 14	04:35:57	36703	2146	-44239	16	T	pp	0.3269	2.2885	1.2284	361.8	221.1	73.1	3S	85E
-1577 Oct 07	20:54:36	36692	2144	-44233	21	T	p-	-0.3508	2.1982	1.2300	311.2	197.8	66.4	0S	162W
-1576 Apr 02	05:09:38	36682	2143	-44227	26	N	t-	1.0822	0.9081	-0.1627	272.1	-	-	2N	78E
-1576 Sep 26	12:26:34	36671	2141	-44221	31	N	a-	-1.0364	0.9481	-0.0355	243.3	-	-	5S	34W

-1575 Feb 20	20:03:54	36663	2140	-44216	-2	P	-h	-0.9765	1.0736	0.0591	268.6	55.8	-	15N	144W
-1575 Aug 17	10:00:12	36652	2138	-44210	3	Nx	-h	1.0099	1.0317	-0.0212	276.8	-	-	17S	3E
-1574 Feb 10	08:56:44	36642	2137	-44204	8	T-	-p	-0.2185	2.4416	1.4721	320.5	208.3	88.3	18N	23E
-1574 Aug 06	11:45:06	36631	2135	-44198	13	T	-p	0.2974	2.3538	1.2713	369.5	224.9	78.9	21S	23W
-1573 Jan 31	01:08:40	36621	2134	-44192	18	T	a-	0.4778	1.9617	1.0004	303.7	186.7	3.0	22N	140E
-1573 Jul 26	12:14:50	36610	2132	-44186	23	T	t-	-0.4395	2.0831	1.0205	353.5	208.8	23.3	23S	31W
-1572 Jan 20	15:58:55	36600	2130	-44180	28	N	a-	1.1993	0.6561	-0.3413	212.7	-	-	24N	84W
-1572 Jun 15	08:54:10	36591	2129	-44175	-5	N	-a	1.4609	0.1649	-0.8100	111.3	-	-	21S	17E
-1572 Jul 14	18:29:21	36589	2129	-44174	33	N	a-	-1.1588	0.7356	-0.2720	230.3	-	-	25S	126W
-1572 Dec 10	08:16:16	36581	2127	-44169	0	P	-t	-0.9479	1.1638	0.0746	297.5	65.9	-	21N	28E
-1571 Jun 05	00:44:56	36570	2126	-44163	5	P	-a	0.6873	1.5674	0.6260	284.4	157.7	-	20S	139E
-1571 Nov 29	07:36:49	36560	2124	-44157	10	T	-p	-0.2801	2.3975	1.2914	373.1	225.3	80.7	19N	36E
-1570 May 25	17:55:43	36549	2123	-44151	15	T-	pp	-0.0508	2.7399	1.7891	321.6	213.5	99.7	18S	119W
-1570 Nov 18	08:33:43	36539	2121	-44145	20	T	a-	0.4043	2.1519	1.0811	350.4	208.6	44.6	16N	21E
-1569 May 15	07:46:22	36528	2120	-44139	25	P	t-	-0.8410	1.3132	0.3164	287.7	124.2	-	15S	33E
-1569 Nov 07	16:33:28	36518	2118	-44133	30	N	a-	1.0616	0.9165	-0.0961	247.0	-	-	13N	99W
-1568 Apr 04	00:28:24	36509	2117	-44128	-3	N	-t	1.1448	0.7925	-0.2771	257.0	-	-	1N	147E
-1568 Sep 27	20:13:08	36499	2115	-44122	2	P	-a	-0.9849	1.0340	0.0675	246.5	56.1	-	4S	151W
-1567 Mar 24	00:54:33	36488	2113	-44116	7	T	-t	0.3949	2.1668	1.1007	359.2	214.9	50.7	5N	141E
-1567 Sep 17	11:10:31	36478	2112	-44110	12	T	-p	-0.3189	2.2698	1.2759	324.8	205.3	73.4	8S	15W
-1566 Mar 13	05:39:56	36467	2110	-44104	17	T	a-	-0.3698	2.1902	1.1687	339.4	209.2	61.8	8N	71E
-1566 Sep 06	20:59:36	36457	2109	-44098	22	T	p-	0.4114	2.1267	1.0798	343.7	206.7	44.0	11S	163W
-1565 Feb 01	08:24:16	36448	2107	-44093	-11	N	-a	1.5177	0.0551	-0.9090	62.9	-	-	22N	31E
-1565 Mar 02	17:30:17	36446	2107	-44092	27	N	a-	-1.0788	0.8646	-0.1076	234.7	-	-	11N	107W
-1565 Aug 26	23:43:07	36436	2106	-44086	32	N	t-	1.1600	0.7728	-0.3129	255.1	-	-	15S	156E
-1564 Jan 22	00:36:26	36427	2104	-44081	-1	P	-a	0.8501	1.2826	0.3134	269.0	117.4	-	23N	147E
-1564 Jul 16	08:37:05	36417	2103	-44075	4	Nx	-t	-1.0067	1.0347	-0.0125	277.8	-	-	25S	22E
-1563 Jan 10	14:09:33	36406	2101	-44069	9	T+	-p	0.1696	2.5545	1.5391	338.5	216.7	94.0	24N	58W
-1563 Jul 05	17:02:40	36396	2099	-44063	14	T-	pp	-0.2074	2.4723	1.4826	333.8	215.3	91.5	24S	105W
-1563 Dec 30	21:03:19	36385	2098	-44057	19	P	t-	-0.5585	1.8710	0.7962	342.5	190.3	-	23N	163W
-1562 Jun 25	07:53:10	36375	2096	-44051	24	P	a-	0.5398	1.8412	0.8935	299.3	180.8	-	23S	31E
-1562 Dec 19	21:18:20	36365	2095	-44045	29	N	t-	-1.2608	0.5974	-0.5073	230.3	-	-	22N	168W
-1561 May 16	17:55:56	36356	2093	-44040	-4	N	-a	-1.2513	0.5424	-0.4186	191.8	-	-	16S	120W
-1561 Jun 15	01:04:42	36354	2093	-44039	34	N	a-	1.2638	0.5121	-0.4343	183.3	-	-	21S	133E
-1561 Nov 09	04:39:57	36345	2092	-44034	1	N	-h	1.0626	0.9354	-0.1185	261.7	-	-	14N	79E
-1560 May 05	06:06:58	36335	2090	-44028	6	P	-h	-0.5302	1.8918	0.8786	328.3	191.9	-	12S	58E
-1560 Oct 28	14:42:06	36325	2089	-44022	11	T	-p	0.3306	2.2500	1.2528	323.0	203.4	70.4	9N	71W
-1559 Apr 24	11:04:31	36314	2087	-44016	16	T+	pp	0.2452	2.4387	1.3781	366.1	227.3	89.2	7S	15W
-1559 Oct 18	05:39:32	36304	2086	-44010	21	T	p-	-0.3440	2.2114	1.2417	311.6	198.2	67.8	4N	65E
-1558 Apr 13	11:38:51	36293	2084	-44004	26	Nx	t-	1.0034	1.0508	-0.0166	287.8	-	-	3S	22W

-1558	Oct 07	20:59:28	36283	2082	-43998	31	N	a-	-1.0279	0.9660	-0.0221	245.9	-	-	1S	164W
-1557	Mar 04	03:37:10	36274	2081	-43993	-2	N	-h	-1.0205	0.9894	-0.0183	258.9	-	-	11N	101E
-1557	Aug 28	17:27:13	36264	2080	-43987	3	N	-h	1.0527	0.9565	-0.1030	269.8	-	-	14S	110W
-1556	Feb 21	16:58:19	36253	2078	-43981	8	T-	-p	-0.2572	2.3681	1.4037	318.2	206.2	83.8	15N	99W
-1556	Aug 16	18:46:05	36243	2076	-43975	13	T	-t	0.3499	2.2596	1.1730	367.6	220.5	65.2	18S	130W
-1555	Feb 10	09:22:46	36232	2075	-43969	18	T	a-	0.4463	2.0185	1.0595	305.8	190.3	35.8	19N	15E
-1555	Aug 05	19:17:02	36222	2073	-43963	23	T	t-	-0.3806	2.1916	1.1282	356.4	214.5	56.2	21S	138W
-1554	Jan 31	00:11:01	36211	2072	-43957	28	N	a-	1.1792	0.6929	-0.3043	218.4	-	-	22N	153E
-1554	Jun 26	16:10:13	36203	2070	-43952	-5	Ne	-a	1.5247	0.0470	-0.9264	59.8	-	-	22S	93W
-1554	Jul 26	01:49:52	36201	2070	-43951	33	N	a-	-1.0960	0.8506	-0.1564	243.9	-	-	24S	123E
-1554	Dec 21	16:19:25	36192	2069	-43946	0	P	-t	-0.9566	1.1480	0.0585	296.6	58.6	-	22N	94W
-1553	Jun 16	08:10:18	36182	2067	-43940	5	P	-a	0.7592	1.4357	0.4939	276.3	142.8	-	21S	26E
-1553	Dec 10	15:36:56	36172	2066	-43934	10	T	-p	-0.2849	2.3878	1.2835	372.4	224.9	79.8	21N	84W
-1552	Jun 05	01:13:35	36161	2064	-43928	15	T+	pp	0.0256	2.7876	1.8341	322.7	214.1	100.2	20S	130E
-1552	Nov 28	16:52:50	36151	2062	-43922	20	T	a-	0.4025	2.1536	1.0861	349.2	208.3	45.8	20N	104W
-1551	May 25	14:42:42	36140	2061	-43916	25	P	t-	-0.7650	1.4547	0.4542	299.2	146.2	-	18S	73W
-1551	Nov 18	01:14:44	36130	2059	-43910	30	N	a-	1.0587	0.9205	-0.0895	246.6	-	-	17N	129E
-1550	Apr 15	06:57:44	36121	2058	-43905	-3	N	-t	1.2246	0.6457	-0.4229	235.5	-	-	3S	47E
-1550	Oct 09	04:52:35	36111	2056	-43899	2	P	-a	-0.9967	1.0137	0.0444	244.9	45.6	-	0S	77E
-1549	Apr 04	07:34:19	36100	2055	-43893	7	P	-t	0.4679	2.0305	0.9691	353.0	206.4	-	1N	39E
-1549	Sep 28	19:31:52	36090	2053	-43887	12	T	-p	-0.3372	2.2389	1.2395	325.4	204.3	69.4	4S	143W
-1548	Mar 23	12:52:43	36080	2052	-43881	17	T	a-	-0.3069	2.3026	1.2874	340.7	213.7	77.3	4N	40W
-1548	Sep 17	04:50:06	36069	2050	-43875	22	T	p-	0.3865	2.1757	1.1224	347.0	209.5	53.9	7S	78E
-1547	Mar 13	01:13:20	36059	2049	-43869	27	N	a-	-1.0246	0.9613	-0.0056	244.1	-	-	8N	135E
-1547	Sep 06	07:04:12	36048	2047	-43863	32	N	t-	1.1242	0.8408	-0.2496	264.9	-	-	11S	44E
-1546	Feb 01	08:57:00	36040	2046	-43858	-1	P	-a	0.8774	1.2319	0.2641	265.5	108.7	-	22N	21E
-1546	Jul 27	15:38:58	36029	2044	-43852	4	N	-t	-1.0655	0.9266	-0.1204	265.1	-	-	23S	84W
-1545	Jan 21	22:22:07	36019	2043	-43846	9	T+	-p	0.1903	2.5168	1.5011	339.1	216.6	92.4	23N	178E
-1545	Jul 17	00:24:46	36009	2041	-43840	14	T-	-p	-0.2704	2.3562	1.3674	330.5	211.4	83.2	24S	143E
-1544	Jan 11	04:58:36	35998	2040	-43834	19	P	t-	-0.5432	1.8990	0.8244	344.6	193.2	-	23N	78E
-1544	Jul 05	15:25:11	35988	2038	-43828	24	T	a-	0.4726	1.9648	1.0165	303.8	188.4	19.2	23S	83W
-1544	Dec 30	05:07:55	35977	2036	-43822	29	N	t-	-1.2486	0.6186	-0.4838	233.7	-	-	23N	74E
-1543	May 27	01:09:14	35969	2035	-43817	-4	N	-a	-1.3288	0.4017	-0.5623	167.9	-	-	19S	130E
-1543	Jun 25	08:31:23	35967	2035	-43816	34	N	a-	1.1978	0.6347	-0.3148	202.0	-	-	22S	20E
-1543	Nov 19	13:06:01	35958	2034	-43811	1	N	-h	1.0589	0.9408	-0.1102	261.4	-	-	17N	49W
-1542	May 16	12:55:10	35948	2032	-43805	6	P	-h	-0.6125	1.7423	0.7260	322.5	179.7	-	16S	46W
-1542	Nov 08	23:28:08	35938	2030	-43799	11	T	-p	0.3289	2.2522	1.2566	322.2	203.1	70.7	13N	155E
-1541	May 05	17:27:30	35927	2029	-43793	16	T+	pp	0.1593	2.5966	1.5353	369.4	231.9	99.5	11S	114W
-1541	Oct 29	14:29:50	35917	2027	-43787	21	T	p-	-0.3417	2.2164	1.2454	311.7	198.3	68.2	9N	70W
-1540	Apr 23	18:03:42	35906	2026	-43781	26	P	t-	0.9201	1.2022	0.1380	302.2	89.7	-	7S	121W

-1540	Oct 18	05:37:45	35896	2024	-43775	31	N	a-	-1.0244	0.9745	-0.0178	247.5	-	-	4N	64E
-1539	Mar 14	11:04:20	35887	2023	-43770	-2	N	-h	-1.0704	0.8947	-0.1066	247.5	-	-	7N	13W
-1539	Sep 08	01:02:18	35877	2021	-43764	3	N	-h	1.0880	0.8949	-0.1708	263.8	-	-	10S	134E
-1538	Mar 04	00:54:10	35867	2020	-43758	8	T	-p	-0.3011	2.2853	1.3255	315.5	203.4	77.3	12N	140E
-1538	Aug 28	01:55:17	35856	2018	-43752	13	T	-t	0.3955	2.1779	1.0875	365.5	216.0	47.7	15S	121E
-1537	Feb 21	17:30:07	35846	2017	-43746	18	T	p-	0.4093	2.0852	1.1283	308.1	194.0	51.5	16N	108W
-1537	Aug 17	02:29:09	35836	2015	-43740	23	T	t-	-0.3291	2.2865	1.2222	358.4	218.5	71.5	19S	113E
-1536	Feb 11	08:12:40	35825	2014	-43734	28	N	a-	1.1514	0.7439	-0.2532	225.9	-	-	20N	31E
-1536	Aug 05	09:20:36	35815	2012	-43728	33	N	a-	-1.0404	0.9524	-0.0542	254.5	-	-	22S	10E
-1535	Jan 01	00:14:34	35806	2011	-43723	0	P	-t	-0.9711	1.1211	0.0319	294.5	43.5	-	23N	147E
-1535	Jun 26	15:41:00	35796	2009	-43717	5	P	-a	0.8269	1.3118	0.3690	267.9	125.7	-	23S	88W
-1535	Dec 20	23:31:32	35786	2008	-43711	10	T	-p	-0.2943	2.3692	1.2676	371.4	224.1	78.0	23N	157E
-1534	Jun 16	08:34:28	35775	2006	-43705	15	T+	pp	0.0988	2.6549	1.6981	323.2	213.6	98.2	22S	18E
-1534	Dec 10	01:10:38	35765	2005	-43699	20	T	a-	0.3988	2.1582	1.0947	348.0	208.3	47.8	22N	130E
-1533	Jun 05	21:36:52	35754	2003	-43693	25	P	t-	-0.6880	1.5981	0.5933	309.7	164.1	-	21S	178W
-1533	Nov 29	09:57:20	35744	2001	-43687	30	N	a-	1.0564	0.9232	-0.0838	246.1	-	-	20N	3W
-1532	Apr 25	13:19:42	35735	2000	-43682	-3	N	-t	1.3092	0.4902	-0.5779	208.5	-	-	7S	51W
-1532	May 25	03:38:30	35734	2000	-43681	35	N	t-	-1.5077	0.1188	-0.9352	104.6	-	-	19S	91E
-1532	Oct 19	13:38:44	35725	1999	-43676	2	P	-a	-1.0033	1.0028	0.0311	244.1	38.3	-	4N	57W
-1531	Apr 14	14:07:45	35715	1997	-43670	7	P	-t	0.5465	1.8840	0.8269	345.5	195.3	-	4S	62W
-1531	Oct 09	04:00:38	35704	1995	-43664	12	T	-p	-0.3488	2.2203	1.2158	326.2	203.8	66.5	1N	88E
-1530	Apr 03	20:00:28	35694	1994	-43658	17	T-	p-	-0.2385	2.4250	1.4159	341.6	217.4	88.5	0N	150W
-1530	Sep 28	12:47:06	35684	1992	-43652	22	T	p-	0.3676	2.2135	1.1541	349.7	211.7	59.9	3S	44W
-1529	Mar 24	08:51:09	35673	1991	-43646	27	P	a-	-0.9655	1.0672	0.1053	253.4	70.8	-	4N	18E
-1529	Sep 17	14:33:27	35663	1989	-43640	32	N	t-	1.0949	0.8968	-0.1980	272.6	-	-	7S	70W
-1528	Feb 12	17:08:58	35654	1988	-43635	-1	P	-a	0.9114	1.1688	0.2024	260.8	96.2	-	19N	103W
-1528	Aug 06	22:50:04	35644	1986	-43629	4	N	-t	-1.1176	0.8311	-0.2161	252.7	-	-	22S	167E
-1527	Feb 01	06:25:51	35634	1985	-43623	9	T+	-p	0.2175	2.4669	1.4511	339.4	216.0	89.8	21N	57E
-1527	Jul 27	07:55:35	35623	1983	-43617	14	T	-p	-0.3268	2.2524	1.2641	327.0	206.9	72.9	23S	30E
-1526	Jan 21	12:45:23	35613	1982	-43611	19	P	t-	-0.5215	1.9385	0.8644	347.2	196.9	-	22N	39W
-1526	Jul 16	23:04:22	35603	1980	-43605	24	T	a-	0.4110	2.0784	1.1289	307.3	194.2	51.7	23S	162E
-1525	Jan 10	12:51:09	35592	1979	-43599	29	N	t-	-1.2311	0.6492	-0.4502	238.5	-	-	23N	42W
-1525	Jun 07	08:22:12	35584	1977	-43594	-4	N	-a	-1.4057	0.2623	-0.7051	138.0	-	-	22S	20E
-1525	Jul 06	16:01:28	35582	1977	-43593	34	N	a-	1.1349	0.7519	-0.2012	217.9	-	-	23S	94W
-1525	Nov 30	21:32:36	35574	1976	-43588	1	N	-h	1.0556	0.9451	-0.1024	260.8	-	-	21N	177W
-1524	May 26	19:41:04	35563	1974	-43582	6	P	-t	-0.6958	1.5914	0.5713	315.4	164.1	-	19S	150W
-1524	Nov 19	08:15:06	35553	1973	-43576	11	T	-p	0.3272	2.2544	1.2609	321.3	202.8	71.1	17N	22E
-1523	May 15	23:48:12	35543	1971	-43570	16	T+	pp	0.0718	2.7578	1.6952	371.7	234.6	105.1	15S	149E
-1523	Nov 08	23:22:49	35532	1970	-43564	21	T	p-	-0.3412	2.2176	1.2458	311.8	198.3	68.2	13N	155E
-1522	May 05	00:26:29	35522	1968	-43558	26	P	t-	0.8342	1.3584	0.2969	315.0	128.4	-	11S	140E

-1522 Oct 29	14:19:33	35512	1967	-43552	31	N	a-	-1.0243	0.9765	-0.0195	248.5	-	-	8N	69W
-1521 Mar 25	18:25:25	35503	1965	-43547	-2	N	-h	-1.1259	0.7897	-0.2055	233.9	-	-	3N	126W
-1521 Apr 24	04:56:39	35501	1965	-43546	36	Nb	h-	1.5464	0.0298	-0.9884	50.4	-	-	6S	74E
-1521 Sep 19	08:45:37	35493	1964	-43541	3	N	-h	1.1156	0.8472	-0.2245	259.0	-	-	6S	16E
-1520 Mar 14	08:40:38	35482	1962	-43535	8	T	-p	-0.3532	2.1873	1.2320	312.2	199.6	67.3	8N	21E
-1520 Sep 07	09:15:21	35472	1961	-43529	13	T	-t	0.4320	2.1128	1.0186	363.7	211.9	22.5	11S	9E
-1519 Mar 04	01:27:51	35462	1959	-43523	18	T	p-	0.3646	2.1663	1.2112	310.7	198.1	64.5	12N	130E
-1519 Aug 27	09:52:35	35451	1958	-43517	23	T	p-	-0.2860	2.3660	1.3009	359.6	221.2	80.6	15S	0E
-1518 Feb 21	16:05:11	35441	1956	-43511	28	N	a-	1.1169	0.8071	-0.1899	234.5	-	-	16N	89W
-1518 Aug 16	17:01:27	35431	1955	-43505	33	P	a-	-0.9921	1.0409	0.0345	262.7	42.4	-	19S	107W
-1517 Jan 12	08:03:46	35422	1953	-43500	0	Nx	-t	-0.9900	1.0861	-0.0022	291.4	-	-	23N	30E
-1517 Jul 07	23:14:58	35412	1952	-43494	5	P	-a	0.8921	1.1932	0.2487	259.0	105.0	-	23S	158E
-1516 Jan 01	07:23:12	35401	1950	-43488	10	T	-p	-0.3064	2.3454	1.2471	370.1	223.1	75.5	24N	38E
-1516 Jun 26	15:57:08	35391	1949	-43482	15	T+	-p	0.1698	2.5267	1.5658	323.0	212.0	93.9	23S	94W
-1516 Dec 20	09:26:01	35381	1947	-43476	20	T	a-	0.3925	2.1675	1.1087	346.8	208.5	50.9	24N	6E
-1515 Jun 16	04:32:43	35371	1946	-43470	25	P	t-	-0.6132	1.7377	0.7280	319.0	178.4	-	23S	77E
-1515 Dec 09	18:39:11	35360	1944	-43464	30	N	a-	1.0533	0.9270	-0.0763	245.6	-	-	23N	134W
-1514 May 06	19:39:44	35352	1943	-43459	-3	N	-t	1.3947	0.3331	-0.7347	174.5	-	-	11S	149W
-1514 Jun 05	10:04:03	35350	1943	-43458	35	N	t-	-1.4273	0.2679	-0.7890	155.3	-	-	22S	7W
-1514 Oct 30	22:27:45	35341	1941	-43453	2	P	-a	-1.0076	0.9959	0.0221	243.8	32.3	-	9N	169E
-1513 Apr 25	20:39:26	35331	1940	-43447	7	P	-t	0.6271	1.7341	0.6811	336.6	181.3	-	8S	163W
-1513 Oct 20	12:33:36	35321	1938	-43441	12	T	-p	-0.3564	2.2086	1.1994	327.2	203.6	64.4	5N	43W
-1512 Apr 14	03:03:47	35311	1937	-43435	17	T-	pp	-0.1652	2.5567	1.5531	341.9	220.1	96.3	4S	102E
-1512 Oct 08	20:50:44	35300	1935	-43429	22	T	p-	0.3547	2.2397	1.1749	352.0	213.2	63.5	1N	167W
-1511 Apr 03	16:23:08	35290	1934	-43423	27	P	a-	-0.9008	1.1838	0.2263	262.6	101.8	-	1S	97W
-1511 Sep 27	22:10:56	35280	1932	-43417	32	N	t-	1.0722	0.9404	-0.1583	278.4	-	-	3S	173E
-1510 Feb 23	01:11:32	35271	1931	-43412	-1	P	-a	0.9530	1.0918	0.1266	254.6	77.1	-	16N	134E
-1510 Aug 18	06:13:02	35261	1929	-43406	4	N	-t	-1.1609	0.7518	-0.2956	241.6	-	-	19S	55E
-1509 Feb 12	14:18:59	35251	1928	-43400	9	T+	-p	0.2528	2.4022	1.3863	339.3	214.9	85.5	18N	63W
-1509 Aug 07	15:35:18	35240	1926	-43394	14	T	-p	-0.3769	2.1605	1.1723	323.5	202.3	60.5	21S	86W
-1508 Feb 01	20:21:45	35230	1925	-43388	19	P	t-	-0.4917	1.9926	0.9195	350.3	201.5	-	20N	154W
-1508 Jul 27	06:50:36	35220	1923	-43382	24	T	p-	0.3549	2.1822	1.2310	310.1	198.6	66.9	22S	44E
-1507 Jan 20	20:25:28	35209	1922	-43376	29	N	t-	-1.2060	0.6935	-0.4024	245.1	-	-	22N	156W
-1507 Jun 17	15:36:26	35201	1921	-43371	-4	N	-a	-1.4808	0.1267	-0.8449	97.5	-	-	24S	90W
-1507 Jul 16	23:37:18	35199	1920	-43370	34	N	a-	1.0769	0.8605	-0.0968	231.1	-	-	22S	152E
-1507 Dec 11	05:59:16	35191	1919	-43365	1	N	-h	1.0534	0.9470	-0.0963	260.0	-	-	23N	56E
-1506 Jun 07	02:25:35	35180	1918	-43359	6	P	-t	-0.7790	1.4410	0.4166	307.0	144.0	-	21S	108E
-1506 Nov 30	17:03:23	35170	1916	-43353	11	T	-p	0.3250	2.2571	1.2662	320.5	202.6	71.6	20N	111W
-1505 May 27	06:06:56	35160	1915	-43347	16	T-	pp	-0.0171	2.8589	1.7949	372.7	235.5	106.5	18S	52E
-1505 Nov 20	08:17:48	35150	1913	-43341	21	T	p-	-0.3428	2.2150	1.2428	311.9	198.2	67.9	16N	20E

-1504 May 15	06:47:36	35139	1911	-43335	26	P	t-	0.7461	1.5189	0.4598	326.2	155.5	-	14S	43E
-1504 Nov 08	23:04:22	35129	1910	-43329	31	N	a-	-1.0273	0.9726	-0.0266	248.9	-	-	12N	158E
-1503 Apr 05	01:42:35	35120	1909	-43324	-2	N	-h	-1.1854	0.6777	-0.3118	218.1	-	-	2S	122E
-1503 May 04	11:47:38	35119	1908	-43323	36	N	h-	1.4664	0.1742	-0.8393	119.9	-	-	10S	32W
-1503 Sep 29	16:35:02	35110	1907	-43318	3	N	-h	1.1375	0.8099	-0.2673	255.1	-	-	2S	104W
-1502 Mar 25	16:22:55	35100	1906	-43312	8	T	-a	-0.4094	2.0823	1.1310	308.4	194.8	52.2	3N	97W
-1502 Sep 18	16:44:17	35090	1904	-43306	13	P	-t	0.4613	2.0608	0.9634	362.0	208.2	-	7S	105W
-1501 Mar 15	09:18:14	35079	1903	-43300	18	T	p-	0.3140	2.2584	1.3048	313.3	202.1	75.2	8N	10E
-1501 Sep 07	17:26:24	35069	1901	-43294	23	T-	p-	-0.2507	2.4312	1.3655	360.1	222.9	86.5	12S	115W
-1500 Mar 03	23:47:18	35059	1900	-43288	28	N	a-	1.0748	0.8845	-0.1127	244.3	-	-	13N	154E
-1500 Aug 27	00:53:17	35049	1898	-43282	33	P	a-	-0.9520	1.1145	0.1081	268.8	74.0	-	16S	134E

# 15TH CENTURY BCE

**In the 15th century BCE the total number of lunar eclipses was 228 lunar eclipses: 86 penumbral lunar eclipses, 60 partial lunar eclipses, 82 total lunar eclipses (27 central total lunar eclipses, 55 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-1499 Jan 22	15:41:38	35040	1897	-43277	0	Nx	-t	-1.0172	1.0354	-0.0514	286.4	-	-	21N	86W
-1499 Jul 18	06:56:50	35030	1895	-43271	5	P	-a	0.9506	1.0869	0.1403	250.1	80.0	-	22S	41E
-1498 Jan 11	15:06:59	35020	1894	-43265	10	T	-p	-0.3248	2.3095	1.2153	368.3	221.5	71.3	23N	78W
-1498 Jul 07	23:23:37	35009	1892	-43259	15	T+	-p	0.2369	2.4059	1.4405	322.4	209.5	87.2	24S	154E
-1498 Dec 31	17:37:02	34999	1891	-43253	20	T	a-	0.3818	2.1845	1.1310	345.8	209.1	55.3	24N	117W
-1497 Jun 27	11:29:27	34989	1889	-43247	25	P	t-	-0.5402	1.8743	0.8593	327.2	190.2	-	24S	29W
-1497 Dec 21	03:17:51	34979	1888	-43241	30	N	a-	1.0468	0.9368	-0.0624	245.8	-	-	24N	96E
-1496 May 17	01:55:01	34970	1886	-43236	-3	N	-t	1.4834	0.1705	-0.8974	126.8	-	-	14S	115E
-1496 Jun 15	16:29:05	34968	1886	-43235	35	N	t-	-1.3463	0.4182	-0.6421	192.0	-	-	23S	104W

-1496	Nov 10	07:20:40	34960	1885	-43230	2	P	-a	-1.0089	0.9943	0.0190	243.9	30.0	-	13N	34E
-1495	May 06	03:08:29	34950	1883	-43224	7	P	-t	0.7105	1.5792	0.5298	326.2	163.5	-	11S	97E
-1495	Oct 30	21:10:23	34939	1882	-43218	12	T	-p	-0.3604	2.2034	1.1900	328.3	203.7	63.1	9N	174W
-1494	Apr 25	10:05:09	34929	1880	-43212	17	T-	pp	-0.0891	2.6937	1.6953	341.5	221.6	100.9	8S	6W
-1494	Oct 20	04:59:50	34919	1879	-43206	22	T	p-	0.3471	2.2563	1.1866	354.0	214.3	65.5	6N	69E
-1493	Apr 14	23:50:23	34909	1877	-43200	27	P	a-	-0.8314	1.3091	0.3556	271.5	125.1	-	5S	148E
-1493	Oct 09	05:56:12	34898	1876	-43194	32	N	t-	1.0557	0.9725	-0.1296	282.6	-	-	2N	55E
-1492	Mar 05	09:05:57	34890	1875	-43189	-1	P	-a	1.0010	1.0033	0.0391	246.9	43.4	-	12N	14E
-1492	Apr 03	16:51:27	34888	1874	-43188	37	Nb	a-	-1.5318	0.0198	-0.9254	37.6	-	-	1S	107W
-1492	Aug 28	13:46:14	34880	1873	-43183	4	N	-t	-1.1970	0.6856	-0.3620	231.5	-	-	16S	60W
-1491	Feb 22	22:02:14	34869	1872	-43177	9	T	-p	0.2957	2.3236	1.3076	338.8	212.9	78.8	15N	180E
-1491	Aug 17	23:25:10	34859	1870	-43171	14	T	-p	-0.4195	2.0823	1.0939	320.1	197.8	45.7	18S	155E
-1490	Feb 12	03:49:06	34849	1869	-43165	19	P	t-	-0.4549	2.0596	0.9876	353.6	206.7	-	18N	93E
-1490	Aug 07	14:43:55	34839	1867	-43159	24	T	p-	0.3043	2.2759	1.3228	312.3	201.9	76.6	20S	75W
-1489	Feb 01	03:52:11	34829	1866	-43153	29	N	t-	-1.1743	0.7497	-0.3422	253.1	-	-	20N	91E
-1489	Jul 28	07:18:48	34818	1864	-43147	34	N	a-	1.0236	0.9605	-0.0013	242.3	-	-	21S	35E
-1489	Dec 22	14:21:47	34810	1863	-43142	1	N	-h	1.0553	0.9411	-0.0973	258.3	-	-	24N	70W
-1488	Jun 17	09:11:03	34800	1861	-43136	6	P	-t	-0.8603	1.2942	0.2651	297.2	117.9	-	23S	5E
-1488	Dec 11	01:49:11	34789	1860	-43130	11	T	-p	0.3256	2.2544	1.2666	319.5	202.3	71.5	22N	117E
-1487	Jun 06	12:27:21	34779	1858	-43124	16	T-	pp	-0.1042	2.7001	1.6340	372.6	234.4	103.7	21S	44W
-1487	Nov 30	17:11:08	34769	1857	-43118	21	T	p-	-0.3428	2.2148	1.2428	311.9	198.3	67.9	19N	115W
-1486	May 26	13:10:46	34759	1855	-43112	26	P	t-	0.6585	1.6786	0.6214	335.6	175.9	-	17S	55W
-1486	Nov 20	07:49:57	34749	1854	-43106	31	N	a-	-1.0314	0.9665	-0.0354	249.1	-	-	16N	25E
-1485	Apr 16	08:54:33	34740	1853	-43101	-2	N	-h	-1.2499	0.5567	-0.4275	199.1	-	-	6S	11E
-1485	May 15	18:37:11	34738	1852	-43100	36	N	h-	1.3836	0.3241	-0.6852	160.6	-	-	14S	136W
-1485	Oct 11	00:32:20	34730	1851	-43095	3	N	-h	1.1524	0.7851	-0.2971	252.7	-	-	3N	135E
-1484	Apr 04	23:57:51	34720	1850	-43089	8	T	-a	-0.4724	1.9649	1.0172	303.8	188.5	19.5	1S	147E
-1484	Sep 29	00:23:14	34709	1848	-43083	13	P	-t	0.4824	2.0233	0.9231	360.7	205.3	-	2S	138E
-1483	Mar 25	16:59:57	34699	1847	-43077	18	T+	p-	0.2563	2.3639	1.4113	316.0	206.0	84.3	4N	108W
-1483	Sep 18	01:11:49	34689	1845	-43071	23	T-	p-	-0.2238	2.4807	1.4145	360.2	223.8	90.1	8S	127E
-1482	Mar 15	07:20:54	34679	1844	-43065	28	N	a-	1.0265	0.9732	-0.0242	254.8	-	-	9N	38E
-1482	Sep 07	08:54:12	34669	1842	-43059	33	P	a-	-0.9184	1.1761	0.1697	273.4	91.6	-	12S	12E
-1481	Feb 02	23:12:00	34660	1841	-43054	0	N	-t	-1.0500	0.9744	-0.1106	279.9	-	-	19N	161E
-1481	Jul 29	14:43:58	34650	1839	-43048	5	P	-a	1.0047	0.9889	0.0396	241.3	43.1	-	21S	77W
-1480	Jan 22	22:43:55	34640	1838	-43042	10	T	-p	-0.3494	2.2621	1.1724	366.0	219.3	64.7	22N	167E
-1480	Jul 18	06:54:35	34630	1836	-43036	15	T	-p	0.2996	2.2933	1.3229	321.4	206.2	78.1	23S	40E
-1479	Jan 11	01:43:14	34619	1835	-43030	20	T	a-	0.3663	2.2100	1.1622	345.0	210.1	60.8	24N	121E
-1479	Jul 07	18:30:20	34609	1833	-43024	25	P	t-	-0.4712	2.0038	0.9831	334.2	199.6	-	24S	135W
-1479	Dec 31	11:52:11	34599	1832	-43018	30	N	a-	1.0363	0.9538	-0.0409	246.7	-	-	25N	33W
-1478	May 28	08:12:18	34591	1831	-43013	-3	Ne	-t	1.5697	0.0124	-1.0560	34.6	-	-	17S	19E

-1478 Jun 26	22:58:41	34589	1830	-43012	35	N	t-	-1.2689	0.5620	-0.5019	220.1	-	-	25S	157E
-1478 Nov 21	16:13:51	34580	1829	-43007	2	P	-a	-1.0101	0.9928	0.0162	244.1	27.8	-	16N	101W
-1477 May 17	09:37:34	34570	1828	-43001	7	P	-t	0.7945	1.4235	0.3773	314.3	141.0	-	15S	2W
-1477 Nov 11	05:49:09	34560	1826	-42995	12	T	-p	-0.3621	2.2021	1.1851	329.5	204.0	62.5	13N	54E
-1476 May 05	17:05:16	34550	1825	-42989	17	T-	pp	-0.0111	2.8345	1.8407	340.4	221.8	102.6	12S	114W
-1476 Oct 30	13:12:06	34540	1823	-42983	22	T	p-	0.3427	2.2664	1.1925	355.6	215.1	66.5	10N	57W
-1475 Apr 25	07:14:36	34529	1822	-42977	27	P	a-	-0.7589	1.4405	0.4902	279.7	143.6	-	9S	34E
-1475 Oct 19	13:48:12	34519	1820	-42971	32	N	t-	1.0448	0.9938	-0.1109	285.4	-	-	6N	66W
-1474 Mar 16	16:51:36	34511	1819	-42966	-1	N	-a	1.0560	0.9021	-0.0615	237.1	-	-	8N	105W
-1474 Apr 15	00:24:03	34509	1819	-42965	37	N	a-	-1.4691	0.1344	-0.8099	96.9	-	-	6S	138E
-1474 Sep 08	21:30:13	34501	1818	-42960	4	N	-t	-1.2254	0.6337	-0.4141	223.1	-	-	12S	178W
-1473 Mar 06	05:34:50	34490	1816	-42954	9	T	-a	0.3464	2.2305	1.2143	337.6	209.9	68.1	11N	64E
-1473 Aug 29	07:25:00	34480	1815	-42948	14	T	-p	-0.4549	2.0177	1.0290	317.0	193.7	25.8	15S	33E
-1472 Feb 23	11:03:37	34470	1813	-42942	19	T	t-	-0.4082	2.1448	1.0740	357.4	212.5	43.6	14N	18W
-1472 Aug 17	22:46:15	34460	1812	-42936	24	T+	p-	0.2611	2.3564	1.4008	314.0	204.2	82.9	18S	163E
-1471 Feb 11	11:09:08	34450	1810	-42930	29	N	t-	-1.1342	0.8211	-0.2666	262.5	-	-	17N	19W
-1471 Aug 07	15:07:08	34440	1809	-42924	34	P	a-	0.9766	1.0494	0.0826	251.7	62.8	-	19S	83W
-1470 Jan 01	22:40:52	34431	1807	-42919	1	N	-h	1.0608	0.9283	-0.1047	255.7	-	-	25N	165E
-1470 Jun 28	15:58:38	34421	1806	-42913	6	P	-t	-0.9386	1.1531	0.1189	286.2	80.9	-	24S	98W
-1470 Dec 22	10:33:23	34411	1804	-42907	11	T	-p	0.3279	2.2483	1.2641	318.4	201.8	71.1	24N	15W
-1469 Jun 17	18:47:54	34401	1803	-42901	16	T-	pp	-0.1908	2.5423	1.4739	371.4	231.5	96.5	23S	141W
-1469 Dec 12	02:03:49	34390	1802	-42895	21	T	p-	-0.3425	2.2151	1.2436	312.0	198.4	68.0	22N	112E
-1468 Jun 05	19:36:01	34380	1800	-42889	26	P	t-	0.5715	1.8374	0.7817	343.4	191.6	-	20S	153W
-1468 Nov 30	16:34:23	34370	1799	-42883	31	N	a-	-1.0353	0.9605	-0.0436	249.2	-	-	19N	107W
-1467 Apr 26	16:05:13	34362	1797	-42878	-2	N	-h	-1.3162	0.4327	-0.5468	176.9	-	-	10S	99W
-1467 May 26	01:29:52	34360	1797	-42877	36	N	h-	1.3018	0.4723	-0.5335	190.3	-	-	17S	118E
-1467 Oct 21	08:34:16	34352	1796	-42872	3	N	-h	1.1630	0.7678	-0.3187	251.1	-	-	7N	12E
-1466 Apr 16	07:29:37	34341	1794	-42866	8	P	-a	-0.5381	1.8428	0.8979	298.5	180.7	-	5S	31E
-1466 Oct 10	08:08:32	34331	1793	-42860	13	P	-t	0.4984	1.9951	0.8927	359.6	202.9	-	2N	19E
-1465 Apr 06	00:35:40	34321	1791	-42854	18	T+	p-	0.1940	2.4779	1.5258	318.4	209.2	91.3	1S	136E
-1465 Sep 29	09:06:23	34311	1790	-42848	23	T-	p-	-0.2040	2.5172	1.4508	359.9	224.2	92.3	3S	6E
-1464 Mar 25	14:43:35	34301	1788	-42842	28	P	h-	0.9704	1.0766	0.0784	266.0	63.6	-	4N	75W
-1464 Sep 17	17:05:33	34291	1787	-42836	33	P	a-	-0.8929	1.2229	0.2165	276.5	102.5	-	8S	113W
-1463 Feb 13	06:30:14	34282	1786	-42831	0	N	-t	-1.0915	0.8971	-0.1858	271.0	-	-	17N	50E
-1463 Aug 08	22:39:29	34272	1784	-42825	5	N	-a	1.0519	0.9039	-0.0485	232.9	-	-	19S	163E
-1463 Sep 07	07:20:27	34270	1784	-42824	43	N	a-	-1.5292	0.0342	-0.9302	49.6	-	-	13S	34E
-1462 Feb 02	06:11:36	34262	1783	-42819	10	T	-t	-0.3817	2.2004	1.1157	363.0	216.1	54.0	20N	54E
-1462 Jul 29	14:31:51	34252	1781	-42813	15	T	-a	0.3561	2.1924	1.2165	320.2	202.5	66.4	22S	75W
-1461 Jan 22	09:42:22	34242	1780	-42807	20	T	a-	0.3442	2.2474	1.2059	344.4	211.6	67.4	23N	1E
-1461 Jul 19	01:34:19	34232	1778	-42801	25	T	t-	-0.4058	2.1269	1.1001	340.4	207.1	48.9	24S	119E



-1460 Jan 11	20:21:12	34221	1777	-42795	30	N	a-	1.0212	0.9790	-0.0106	248.4	-	-	25N	160W
-1460 Jul 07	05:31:45	34211	1775	-42789	35	N	t-	-1.1945	0.7007	-0.3674	243.1	-	-	25S	58E
-1460 Dec 02	01:06:37	34203	1774	-42784	2	P	-a	-1.0113	0.9908	0.0136	244.2	25.5	-	19N	125E
-1459 May 27	16:07:59	34193	1773	-42778	7	P	-t	0.8777	1.2695	0.2260	301.0	111.3	-	18S	102W
-1459 Nov 21	14:29:13	34183	1771	-42772	12	T	-p	-0.3617	2.2044	1.1843	330.8	204.5	62.6	17N	77W
-1458 May 17	00:05:16	34172	1770	-42766	17	T+	pp	0.0681	2.7280	1.7381	338.4	220.7	101.4	15S	139E
-1458 Nov 10	21:26:59	34162	1768	-42760	22	T	p-	0.3412	2.2710	1.1935	357.0	215.6	66.7	14N	178E
-1457 May 06	14:36:36	34152	1767	-42754	27	P	a-	-0.6841	1.5762	0.6287	287.1	158.9	-	13S	79W
-1457 Oct 30	21:45:17	34142	1765	-42748	32	Nx	t-	1.0376	1.0080	-0.0986	287.2	-	-	11N	173E
-1456 Mar 27	00:28:51	34134	1764	-42743	-1	N	-a	1.1174	0.7893	-0.1741	224.9	-	-	4N	138E
-1456 Apr 25	07:51:31	34132	1764	-42742	37	N	a-	-1.4024	0.2566	-0.6874	132.6	-	-	10S	23E
-1456 Sep 19	05:24:23	34124	1763	-42737	4	N	-h	-1.2465	0.5950	-0.4528	216.3	-	-	8S	61E
-1455 Mar 16	12:58:36	34113	1761	-42731	9	T	-a	0.4038	2.1255	1.1087	335.7	205.4	50.4	7N	49W
-1455 Sep 08	15:33:40	34103	1760	-42725	14	P	-a	-0.4836	1.9651	0.9761	314.2	189.9	-	11S	91W
-1454 Mar 05	18:09:36	34093	1758	-42719	19	T	p-	-0.3548	2.2420	1.1724	361.1	218.2	64.6	11N	126W
-1454 Aug 29	06:56:39	34083	1757	-42713	24	T+	p-	0.2246	2.4247	1.4666	315.3	205.9	87.2	14S	38E
-1453 Feb 22	18:16:58	34073	1755	-42707	29	N	t-	-1.0864	0.9066	-0.1765	272.9	-	-	14N	128W
-1453 Aug 18	23:02:29	34063	1754	-42701	34	P	a-	0.9357	1.1270	0.1550	259.5	85.4	-	17S	157E
-1452 Jan 13	06:53:42	34054	1753	-42696	1	N	-h	1.0722	0.9043	-0.1229	251.9	-	-	24N	42E
-1452 Jul 08	22:50:35	34044	1751	-42690	6	Nx	-t	-1.0123	1.0207	-0.0192	274.4	-	-	25S	158E
-1451 Jan 01	19:10:57	34034	1750	-42684	11	T	-p	0.3365	2.2305	1.2503	317.0	201.0	69.5	24N	144W
-1451 Jun 28	01:13:58	34024	1748	-42678	16	T	pp	-0.2728	2.3933	1.3221	369.1	226.9	84.5	24S	122E
-1451 Dec 22	10:52:09	34014	1747	-42672	21	T	p-	-0.3384	2.2223	1.2517	312.3	198.9	69.0	23N	21W
-1450 Jun 17	02:05:01	34004	1745	-42666	26	P	t-	0.4866	1.9927	0.9381	349.5	203.6	-	22S	108E
-1450 Dec 12	01:16:14	33994	1744	-42660	31	N	a-	-1.0376	0.9571	-0.0486	249.6	-	-	21N	122E
-1449 May 07	23:13:19	33986	1743	-42655	-2	N	-h	-1.3853	0.3037	-0.6716	149.4	-	-	14S	151E
-1449 Jun 06	08:24:10	33984	1742	-42654	36	N	h-	1.2197	0.6215	-0.3813	214.3	-	-	19S	13E
-1449 Nov 01	16:40:50	33975	1741	-42649	3	N	-t	1.1690	0.7585	-0.3316	250.6	-	-	11N	111W
-1448 Apr 26	14:55:41	33965	1740	-42643	8	P	-a	-0.6090	1.7116	0.7691	292.1	170.8	-	9S	83W
-1448 Oct 20	16:02:05	33955	1738	-42637	13	P	-t	0.5078	1.9788	0.8748	358.9	201.4	-	6N	101W
-1447 Apr 16	08:04:57	33945	1737	-42631	18	T+	pp	0.1267	2.6013	1.6492	320.5	211.9	96.5	5S	21E
-1447 Oct 09	17:09:26	33935	1735	-42625	23	T-	p-	-0.1903	2.5420	1.4760	359.2	224.2	93.6	1N	117W
-1446 Apr 05	21:59:20	33925	1734	-42619	28	P	h-	0.9093	1.1892	0.1898	277.2	97.7	-	0N	173E
-1446 Sep 29	01:25:38	33915	1733	-42613	33	P	a-	-0.8738	1.2578	0.2517	278.5	109.6	-	4S	119E
-1445 Feb 24	13:39:18	33906	1731	-42608	0	N	-t	-1.1400	0.8071	-0.2737	259.5	-	-	13N	59W
-1445 Aug 20	06:41:42	33896	1730	-42602	5	N	-a	1.0936	0.8290	-0.1267	225.1	-	-	16S	41E
-1445 Sep 18	15:45:16	33895	1730	-42601	43	N	a-	-1.5052	0.0792	-0.8871	75.1	-	-	9S	95W
-1444 Feb 13	13:31:43	33886	1728	-42596	10	T	-t	-0.4206	2.1263	1.0469	359.4	211.9	35.1	17N	57W
-1444 Aug 08	22:15:32	33876	1727	-42590	15	T	-a	0.4066	2.1026	1.1210	318.9	198.5	51.3	20S	168E
-1443 Feb 01	17:34:32	33866	1726	-42584	20	T	p-	0.3155	2.2968	1.2618	344.0	213.4	74.4	21N	118W

-1443	Jul 29	08:45:12	33856	1724	-42578	25	T	p-	-0.3470	2.2381	1.2049	345.5	213.0	67.8	22S	10E
-1442	Jan 22	04:44:22	33846	1723	-42572	30	P	a-	1.0008	1.0138	0.0293	251.0	37.9	-	23N	74E
-1442	Jul 18	12:10:24	33836	1721	-42566	35	N	t-	-1.1245	0.8311	-0.2411	262.0	-	-	24S	42W
-1442	Dec 13	09:56:30	33827	1720	-42561	2	P	-a	-1.0149	0.9844	0.0070	243.9	18.3	-	21N	9W
-1441	Jun 07	22:41:51	33817	1718	-42555	7	P	-t	0.9584	1.1203	0.0790	286.4	67.0	-	20S	158E
-1441	Dec 02	23:06:45	33807	1717	-42549	12	T	-p	-0.3631	2.2031	1.1806	331.9	204.8	62.2	20N	153E
-1440	May 27	07:06:56	33797	1716	-42543	17	T+	pp	0.1469	2.5816	1.5951	335.7	218.2	97.2	18S	32E
-1440	Nov 21	05:41:37	33787	1714	-42537	22	T	p-	0.3402	2.2743	1.1940	358.3	216.1	67.0	18N	53E
-1439	May 16	21:58:18	33777	1713	-42531	27	P	a-	-0.6083	1.7143	0.7688	293.7	171.5	-	16S	169E
-1439	Nov 10	05:44:30	33767	1711	-42525	32	Nx	t-	1.0320	1.0186	-0.0889	288.5	-	-	15N	52E
-1438	Apr 07	07:59:03	33759	1710	-42520	-1	N	-a	1.1840	0.6672	-0.2965	209.9	-	-	0S	23E
-1438	May 06	15:16:00	33757	1710	-42519	37	N	a-	-1.3334	0.3834	-0.5610	160.4	-	-	13S	90W
-1438	Sep 30	13:28:50	33749	1709	-42514	4	N	-h	-1.2602	0.5697	-0.4778	211.5	-	-	3S	62W
-1437	Mar 27	20:11:00	33739	1707	-42508	9	P	-a	0.4694	2.0055	0.9879	332.7	199.1	-	3N	159W
-1437	Sep 19	23:52:27	33729	1706	-42502	14	P	-a	-0.5047	1.9266	0.9372	312.0	186.9	-	7S	143E
-1436	Mar 16	01:03:31	33718	1704	-42496	19	T	pp	-0.2924	2.3560	1.2876	364.7	223.7	80.3	7N	128E
-1436	Sep 08	15:16:08	33708	1703	-42490	24	T+	p-	0.1956	2.4793	1.5185	316.2	207.0	89.9	10S	88W
-1435	Mar 05	01:15:22	33698	1701	-42484	29	Nx	t-	-1.0303	1.0071	-0.0715	284.1	-	-	10N	125E
-1435	Aug 29	07:05:58	33688	1700	-42478	34	P	a-	0.9021	1.1913	0.2139	265.8	99.7	-	14S	34E
-1434	Jan 23	15:01:34	33680	1699	-42473	1	N	-h	1.0887	0.8710	-0.1499	246.9	-	-	23N	81W
-1434	Jul 20	05:45:20	33670	1697	-42467	6	N	-t	-1.0825	0.8948	-0.1509	261.5	-	-	24S	54E
-1433	Jan 13	03:44:51	33660	1696	-42461	11	T	-p	0.3487	2.2061	1.2301	315.5	199.9	67.0	24N	87E
-1433	Jul 09	07:43:27	33650	1694	-42455	16	T	-t	-0.3519	2.2497	1.1756	365.9	220.7	65.8	24S	23E
-1432	Jan 02	19:35:39	33640	1693	-42449	21	T	p-	-0.3306	2.2359	1.2666	312.8	199.6	70.8	24N	152W
-1432	Jun 27	08:39:30	33630	1692	-42443	26	T	t-	0.4053	2.1415	1.0877	354.2	212.6	47.2	23S	8E
-1432	Dec 22	09:53:33	33620	1690	-42437	31	N	a-	-1.0368	0.9591	-0.0479	250.5	-	-	22N	8W
-1431	May 18	06:23:01	33611	1689	-42432	-2	N	-a	-1.4535	0.1768	-0.7951	114.9	-	-	17S	42E
-1431	Jun 16	15:24:12	33610	1689	-42431	36	N	a-	1.1411	0.7644	-0.2358	233.3	-	-	21S	93W
-1431	Nov 12	00:47:40	33601	1687	-42426	3	N	-t	1.1741	0.7506	-0.3424	250.1	-	-	15N	125E
-1430	May 07	22:21:25	33591	1686	-42420	8	P	-a	-0.6802	1.5800	0.6392	284.9	158.9	-	13S	163E
-1430	Oct 31	23:59:39	33581	1685	-42414	13	P	-t	0.5139	1.9679	0.8631	358.2	200.4	-	11N	138E
-1429	Apr 27	15:28:46	33571	1683	-42408	18	T+	pp	0.0554	2.7324	1.7796	322.1	213.6	99.5	9S	93W
-1429	Oct 21	01:19:58	33561	1682	-42402	23	T-	p-	-0.1821	2.5567	1.4915	358.4	224.0	94.2	6N	118E
-1428	Apr 16	05:06:37	33551	1680	-42396	28	P	t-	0.8421	1.3133	0.3123	288.4	123.6	-	4S	64E
-1428	Oct 09	09:53:43	33541	1679	-42390	33	P	a-	-0.8607	1.2816	0.2760	279.5	114.1	-	1N	10W
-1427	Mar 06	20:36:44	33533	1678	-42385	0	N	-t	-1.1970	0.7013	-0.3772	244.6	-	-	9N	166W
-1427	Aug 30	14:53:27	33523	1676	-42379	5	N	-a	1.1275	0.7686	-0.1906	218.3	-	-	13S	83W
-1427	Sep 29	00:18:44	33521	1676	-42378	43	N	a-	-1.4880	0.1115	-0.8564	88.8	-	-	4S	135E
-1426	Feb 23	20:42:48	33513	1675	-42373	10	P	-t	-0.4672	2.0381	0.9641	354.9	206.2	-	14N	166W
-1426	Aug 20	06:05:49	33503	1673	-42367	15	T	-a	0.4507	2.0248	1.0372	317.7	194.5	29.2	17S	49E

-1425 Feb 13	01:19:15	33493	1672	-42361	20	T	p-	0.2798	2.3589	1.3306	343.7	215.4	81.5	18N	125E
-1425 Aug 09	16:01:54	33483	1670	-42355	25	T	p-	-0.2941	2.3385	1.2986	349.9	217.5	79.4	20S	100W
-1424 Feb 02	12:59:11	33473	1669	-42349	30	P	a-	0.9733	1.0616	0.0825	254.6	63.0	-	21N	51W
-1424 Jul 28	18:56:08	33463	1668	-42343	35	N	t-	-1.0604	0.9511	-0.1257	277.5	-	-	23S	144W
-1424 Dec 23	18:42:56	33454	1666	-42338	2	N	-a	-1.0209	0.9734	-0.0039	243.2	-	-	23N	141W
-1423 Jun 18	05:20:18	33444	1665	-42332	7	N	-t	1.0361	0.9769	-0.0625	270.6	-	-	22S	57E
-1423 Dec 13	07:41:42	33434	1663	-42326	12	T	-a	-0.3657	2.1993	1.1747	333.0	205.1	61.4	22N	23E
-1422 Jun 07	14:11:45	33424	1662	-42320	17	T+	pp	0.2239	2.4390	1.4553	332.3	214.5	89.8	21S	76W
-1422 Dec 02	13:55:40	33414	1661	-42314	22	T	p-	0.3393	2.2770	1.1947	359.4	216.7	67.2	20N	71W
-1421 May 28	05:19:11	33404	1659	-42308	27	P	a-	-0.5316	1.8544	0.9102	299.5	181.9	-	19S	57E
-1421 Nov 21	13:46:28	33394	1658	-42302	32	Nx	t-	1.0287	1.0249	-0.0829	289.2	-	-	18N	70W
-1420 Apr 17	15:22:55	33386	1657	-42297	-1	N	-a	1.2549	0.5376	-0.4270	191.4	-	-	5S	91W
-1420 May 16	22:38:09	33384	1656	-42296	37	N	a-	-1.2630	0.5131	-0.4323	183.5	-	-	17S	157E
-1420 Oct 10	21:40:58	33376	1655	-42291	4	N	-h	-1.2685	0.5541	-0.4926	208.2	-	-	1N	173E
-1419 Apr 07	03:16:08	33366	1654	-42285	9	P	-h	0.5400	1.8767	0.8579	328.6	190.6	-	1S	92E
-1419 Sep 30	08:19:09	33356	1652	-42279	14	P	-a	-0.5196	1.8993	0.9098	310.1	184.6	-	3S	14E
-1418 Mar 27	07:49:56	33346	1651	-42273	19	T-	pp	-0.2241	2.4808	1.4135	367.9	228.5	91.9	3N	24E
-1418 Sep 19	23:42:23	33336	1649	-42267	24	T+	p-	0.1723	2.5234	1.5599	317.0	207.7	91.8	6S	143E
-1417 Mar 16	08:05:56	33326	1648	-42261	29	P	t-	-0.9673	1.1204	0.0464	295.3	52.7	-	6N	21E
-1417 Sep 09	15:16:42	33316	1647	-42255	34	P	a-	0.8750	1.2439	0.2610	271.0	109.6	-	10S	90W
-1416 Feb 03	23:00:07	33307	1645	-42250	1	N	-h	1.1134	0.8223	-0.1922	240.0	-	-	21N	159E
-1416 Jul 30	12:47:31	33297	1644	-42244	6	N	-t	-1.1456	0.7821	-0.2698	248.4	-	-	23S	53W
-1415 Jan 23	12:10:20	33287	1643	-42238	11	T	-p	0.3685	2.1676	1.1960	313.6	198.2	62.5	22N	40W
-1415 Jul 19	14:20:37	33277	1641	-42232	16	T	-t	-0.4243	2.1184	1.0411	362.0	213.4	33.2	24S	77W
-1414 Jan 13	04:11:48	33267	1640	-42226	21	T	p-	-0.3168	2.2605	1.2927	313.6	200.8	73.6	23N	79E
-1414 Jul 08	15:21:15	33258	1638	-42220	26	T	t-	0.3289	2.2815	1.2280	357.6	219.1	72.5	24S	93W
-1413 Jan 02	18:24:41	33247	1637	-42214	31	N	a-	-1.0319	0.9684	-0.0392	252.3	-	-	23N	136W
-1413 May 29	13:31:54	33239	1636	-42209	-2	Ne	-a	-1.5230	0.0479	-0.9211	60.3	-	-	20S	67W
-1413 Jun 27	22:28:08	33238	1635	-42208	36	N	a-	1.0644	0.9042	-0.0942	249.2	-	-	23S	160E
-1413 Nov 23	08:56:31	33229	1634	-42203	3	N	-t	1.1770	0.7462	-0.3488	250.1	-	-	19N	2E
-1412 May 18	05:44:21	33219	1633	-42197	8	P	-a	-0.7541	1.4439	0.5040	276.7	144.1	-	17S	50E
-1412 Nov 11	08:01:18	33209	1631	-42191	13	P	-t	0.5169	1.9624	0.8577	357.7	199.8	-	15N	16E
-1411 May 07	22:48:52	33199	1630	-42185	18	T-	pp	-0.0185	2.8008	1.8468	323.1	214.3	100.3	13S	155E
-1411 Oct 31	09:37:05	33189	1629	-42179	23	T-	p-	-0.1784	2.5628	1.4991	357.3	223.6	94.4	10N	8W
-1410 Apr 27	12:07:59	33179	1627	-42173	28	P	t-	0.7709	1.4450	0.4419	299.2	144.7	-	8S	44W
-1410 Oct 20	18:28:23	33169	1626	-42167	33	P	a-	-0.8525	1.2963	0.2915	279.8	116.6	-	5N	141W
-1409 Mar 18	03:26:03	33161	1625	-42162	0	N	-t	-1.2598	0.5848	-0.4914	226.0	-	-	5N	90E
-1409 Sep 10	23:12:15	33151	1623	-42156	5	N	-a	1.1553	0.7194	-0.2435	212.6	-	-	9S	150E
-1409 Oct 10	08:58:39	33149	1623	-42155	43	N	a-	-1.4764	0.1336	-0.8358	97.0	-	-	0N	3E
-1408 Mar 06	03:45:34	33141	1622	-42150	10	P	-t	-0.5208	1.9369	0.8684	349.4	198.8	-	10N	86E

-1408 Aug 30	14:03:48	33131	1620	-42144	15	P	-a	0.4874	1.9605	0.9669	316.7	190.7	-	13S	72W
-1407 Feb 23	08:57:14	33121	1619	-42138	20	T+	p-	0.2379	2.4323	1.4107	343.4	217.4	87.9	15N	9E
-1407 Aug 19	23:25:32	33111	1618	-42132	25	T-	pp	-0.2479	2.4265	1.3801	353.5	220.9	87.0	17S	147E
-1406 Feb 12	21:07:20	33101	1616	-42126	30	P	a-	0.9400	1.1201	0.1463	259.0	83.0	-	19N	174W
-1406 Aug 09	01:49:59	33091	1615	-42120	35	Nx	t-	-1.0030	1.0586	-0.0226	290.2	-	-	21S	111E
-1405 Jan 04	03:23:05	33083	1614	-42115	2	N	-a	-1.0319	0.9528	-0.0239	241.5	-	-	23N	89E
-1405 Jun 29	12:04:25	33073	1612	-42109	7	N	-t	1.1096	0.8413	-0.1968	253.8	-	-	23S	45W
-1405 Dec 24	16:10:49	33063	1611	-42103	12	T	-a	-0.3724	2.1878	1.1619	333.8	205.1	59.5	23N	104W
-1404 Jun 17	21:21:15	33053	1609	-42097	17	T	-p	0.2977	2.3024	1.3208	328.2	209.6	79.0	22S	175E
-1404 Dec 12	22:04:37	33043	1608	-42091	22	T	p-	0.3351	2.2853	1.2018	360.6	217.5	68.4	23N	166E
-1403 Jun 07	12:42:46	33033	1606	-42085	27	T	a-	-0.4568	1.9913	1.0478	304.2	190.2	32.3	21S	56W
-1403 Dec 01	21:47:33	33023	1605	-42079	32	Nx	t-	1.0249	1.0315	-0.0756	289.8	-	-	21N	169E
-1402 Apr 28	22:40:36	33015	1604	-42074	-1	N	-a	1.3301	0.4004	-0.5656	167.9	-	-	8S	157E
-1402 May 28	05:58:17	33013	1604	-42073	37	N	a-	-1.1912	0.6457	-0.3015	203.6	-	-	20S	45E
-1402 Oct 22	06:00:41	33005	1602	-42068	4	N	-h	-1.2714	0.5481	-0.4974	206.5	-	-	6N	46E
-1401 Apr 18	10:12:11	32995	1601	-42062	9	P	-h	0.6167	1.7367	0.7163	323.0	179.0	-	5S	15W
-1401 Oct 11	16:54:06	32985	1600	-42056	14	P	-a	-0.5286	1.8827	0.8933	308.7	183.0	-	2N	117W
-1400 Apr 06	14:25:43	32975	1598	-42050	19	T-	pp	-0.1475	2.6209	1.5544	370.6	232.3	100.3	2S	78W
-1400 Sep 30	08:17:07	32965	1597	-42044	24	T+	p-	0.1559	2.5548	1.5887	317.6	208.2	92.9	2S	12E

14TH CENTURY BCE

In the 14th century BCE the total number of lunar eclipses was 239 lunar eclipses: 83 penumbral lunar eclipses, 90 partial lunar eclipses, 66 total lunar eclipses (43 central total lunar eclipses, 23 non-central total lunar eclipses).

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
	ECLIPSE														
-1399 Mar 26	14:49:17	32955	1595	-42038	29	P	t-	-0.8976	1.2461	0.1766	306.4	100.8	-	2N	83W

-1399 Sep 19	23:34:09	32945	1594	-42032	34	P	a-	0.8539	1.2853	0.2971	275.2	116.6	-	6S	143E
-1398 Feb 14	06:53:13	32937	1593	-42027	1	N	-h	1.1435	0.7639	-0.2441	231.6	-	-	18N	39E
-1398 Aug 10	19:55:16	32927	1591	-42021	6	N	-t	-1.2033	0.6795	-0.3786	234.9	-	-	21S	161W
-1397 Feb 03	20:29:34	32917	1590	-42015	11	T	-p	0.3938	2.1188	1.1518	311.3	195.9	55.8	20N	165W
-1397 Jul 30	21:03:57	32907	1589	-42009	16	P	-t	-0.4915	1.9968	0.9161	357.7	204.9	-	22S	178W
-1396 Jan 24	12:41:20	32897	1587	-42003	21	T	p-	-0.2978	2.2945	1.3284	314.6	202.3	77.1	22N	49W
-1396 Jul 18	22:11:32	32887	1586	-41997	26	T+	p-	0.2586	2.4105	1.3570	359.7	223.6	86.3	23S	164E
-1395 Jan 13	02:47:55	32877	1584	-41991	31	N	a-	-1.0213	0.9881	-0.0200	255.1	-	-	22N	98E
-1395 Jul 08	05:40:48	32867	1583	-41985	36	P	a-	0.9936	1.0334	0.0365	261.8	43.6	-	23S	51E
-1395 Dec 03	17:02:48	32859	1582	-41980	3	N	-t	1.1817	0.7383	-0.3579	249.5	-	-	22N	120W
-1394 May 29	13:08:13	32849	1580	-41974	8	P	-a	-0.8273	1.3095	0.3699	267.5	125.9	-	20S	63W
-1394 Nov 22	16:03:54	32839	1579	-41968	13	P	-t	0.5194	1.9574	0.8535	357.0	199.3	-	18N	106W
-1393 May 19	06:06:29	32829	1578	-41962	18	T-	pp	-0.0942	2.6630	1.7070	323.5	213.9	98.6	16S	43E
-1393 Nov 11	17:57:36	32820	1576	-41956	23	T-	p-	-0.1768	2.5646	1.5031	356.1	223.1	94.4	14N	135W
-1392 May 07	19:03:35	32810	1575	-41950	28	P	t-	0.6958	1.5842	0.5783	309.4	162.6	-	12S	151W
-1392 Oct 31	03:08:21	32800	1573	-41944	33	P	a-	-0.8479	1.3039	0.3005	279.6	118.0	-	9N	87E
-1391 Mar 28	10:06:03	32791	1572	-41939	0	N	-t	-1.3293	0.4565	-0.6177	202.2	-	-	1N	13W
-1391 Apr 27	00:54:09	32790	1572	-41938	38	N	t-	1.5131	0.1100	-0.9463	100.8	-	-	8S	123E
-1391 Sep 21	07:39:00	32781	1571	-41933	5	N	-a	1.1767	0.6821	-0.2844	208.1	-	-	5S	21E
-1391 Oct 20	17:44:04	32780	1571	-41932	43	N	a-	-1.4693	0.1473	-0.8233	101.6	-	-	5N	131W
-1390 Mar 17	10:40:45	32772	1570	-41927	10	P	-t	-0.5811	1.8236	0.7606	342.7	189.2	-	6N	20W
-1390 Sep 10	22:09:34	32762	1568	-41921	15	P	-a	0.5168	1.9095	0.9098	316.1	187.3	-	9S	164E
-1389 Mar 06	16:26:22	32752	1567	-41915	20	T+	p-	0.1876	2.5213	1.5064	343.1	219.3	93.8	11N	106W
-1389 Aug 31	06:57:04	32742	1565	-41909	25	T-	pp	-0.2090	2.5012	1.4481	356.7	223.4	92.1	14S	33E
-1388 Feb 24	05:06:59	32732	1564	-41903	30	P	a-	0.8991	1.1925	0.2239	264.2	101.4	-	15N	65E
-1388 Aug 19	08:52:54	32722	1563	-41897	35	P	t-	-0.9528	1.1530	0.0674	300.4	63.6	-	18S	4E
-1387 Jan 14	11:56:26	32714	1561	-41892	2	N	-a	-1.0483	0.9225	-0.0535	238.7	-	-	22N	40W
-1387 Jul 09	18:56:18	32704	1560	-41886	7	N	-t	1.1774	0.7163	-0.3208	236.4	-	-	23S	149W
-1386 Jan 04	00:34:55	32694	1559	-41880	12	T	-a	-0.3824	2.1699	1.1431	334.4	204.9	56.5	23N	129E
-1386 Jun 29	04:34:53	32684	1557	-41874	17	T	-p	0.3690	2.1708	1.1908	323.6	203.6	63.5	23S	66E
-1386 Dec 24	06:10:08	32674	1556	-41868	22	T	p-	0.3286	2.2974	1.2134	361.8	218.5	70.2	24N	44E
-1385 Jun 18	20:08:17	32664	1554	-41862	27	T	a-	-0.3836	2.1258	1.1822	308.2	196.7	60.5	23S	168W
-1385 Dec 13	05:46:16	32654	1553	-41856	32	Nx	t-	1.0188	1.0419	-0.0637	290.8	-	-	23N	49E
-1384 May 09	05:54:22	32646	1552	-41851	-1	N	-a	1.4076	0.2592	-0.7089	137.4	-	-	12S	46E
-1384 Jun 07	13:19:07	32644	1552	-41850	37	N	a-	-1.1203	0.7769	-0.1726	220.9	-	-	22S	67W
-1384 Nov 01	14:25:31	32636	1550	-41845	4	N	-h	-1.2712	0.5476	-0.4961	205.7	-	-	10N	82W
-1383 Apr 28	17:03:40	32626	1549	-41839	9	P	-t	0.6964	1.5916	0.5691	316.1	164.0	-	9S	121W
-1383 Oct 22	01:33:34	32616	1548	-41833	14	P	-a	-0.5345	1.8717	0.8827	307.5	181.9	-	6N	111E
-1382 Apr 17	20:56:32	32607	1546	-41827	19	T-	pp	-0.0672	2.7680	1.7020	372.4	234.7	105.2	6S	178W
-1382 Oct 11	16:57:35	32597	1545	-41821	24	T+	p-	0.1444	2.5771	1.6087	318.1	208.5	93.6	3N	120W

-1381 Apr 06	21:25:11	32587	1544	-41815	29	P	t-	-0.8211	1.3843	0.3190	317.2	132.5	-	2S	175E
-1381 Oct 01	07:58:48	32577	1542	-41809	34	P	a-	0.8393	1.3146	0.3212	278.4	121.1	-	1S	15E
-1380 Feb 25	14:37:02	32569	1541	-41804	1	N	-h	1.1817	0.6905	-0.3110	220.8	-	-	15N	78W
-1380 Mar 26	01:53:17	32567	1541	-41803	39	Nb	h-	-1.5238	0.0734	-0.9489	78.8	-	-	2N	109E
-1380 Aug 21	03:11:56	32559	1540	-41798	6	N	-t	-1.2527	0.5919	-0.4723	222.0	-	-	18S	89E
-1379 Feb 14	04:39:19	32549	1538	-41792	11	T	-p	0.4274	2.0548	1.0923	308.5	192.8	44.3	17N	71E
-1379 Aug 10	03:57:46	32539	1537	-41786	16	P	-t	-0.5501	1.8910	0.8070	353.2	196.1	-	20S	77E
-1378 Feb 03	21:02:12	32529	1535	-41780	21	T-	p-	-0.2718	2.3413	1.3770	315.8	204.2	81.3	20N	175W
-1378 Jul 30	05:10:09	32519	1534	-41774	26	T+	pp	0.1942	2.5288	1.4751	360.9	226.4	94.7	22S	58E
-1377 Jan 24	11:02:59	32509	1533	-41768	31	P	a-	-1.0049	1.0183	0.0101	258.9	22.8	-	21N	27W
-1377 Jul 19	13:00:11	32500	1531	-41762	36	P	a-	0.9270	1.1551	0.1591	272.1	89.3	-	22S	60W
-1377 Dec 15	01:06:12	32491	1530	-41757	3	N	-t	1.1880	0.7269	-0.3696	248.2	-	-	24N	118E
-1376 Jun 08	20:32:28	32481	1529	-41751	8	P	-a	-0.9002	1.1759	0.2359	257.3	102.4	-	22S	175W
-1376 Dec 03	00:07:25	32471	1527	-41745	13	P	-t	0.5215	1.9526	0.8504	356.3	198.8	-	21N	132E
-1375 May 29	13:22:43	32462	1526	-41739	18	T-	p-	-0.1702	2.5249	1.5662	323.2	212.3	94.1	19S	68W
-1375 Nov 22	02:20:38	32452	1525	-41733	23	T-	p-	-0.1765	2.5636	1.5050	354.8	222.5	94.3	17N	98E
-1374 May 19	01:56:07	32442	1523	-41727	28	P	t-	0.6190	1.7268	0.7177	318.8	177.7	-	16S	104E
-1374 Nov 11	11:52:25	32432	1522	-41721	33	P	a-	-0.8465	1.3056	0.3040	278.9	118.3	-	13N	45W
-1373 Apr 08	16:38:02	32424	1521	-41716	0	N	-t	-1.4043	0.3179	-0.7545	170.9	-	-	3S	114W
-1373 May 08	07:19:48	32422	1521	-41715	38	N	t-	1.4336	0.2566	-0.8009	152.3	-	-	12S	24E
-1373 Oct 02	16:12:38	32414	1519	-41710	5	N	-a	1.1923	0.6551	-0.3148	204.8	-	-	0S	109W
-1373 Nov 01	02:34:12	32412	1519	-41709	43	N	a-	-1.4662	0.1534	-0.8181	103.7	-	-	9N	95E
-1372 Mar 27	17:29:21	32404	1518	-41704	10	P	-t	-0.6472	1.6997	0.6419	334.7	177.0	-	2N	125W
-1372 Sep 21	06:21:56	32394	1517	-41698	15	P	-a	0.5401	1.8699	0.8643	315.8	184.6	-	5S	39E
-1371 Mar 16	23:50:05	32384	1515	-41692	20	T+	pp	0.1320	2.6201	1.6117	342.5	220.7	98.3	7N	141E
-1371 Sep 10	14:36:19	32375	1514	-41686	25	T-	pp	-0.1773	2.5626	1.5032	359.3	225.3	95.4	10S	84W
-1370 Mar 06	13:00:00	32365	1512	-41680	30	P	a-	0.8524	1.2756	0.3121	269.9	118.0	-	11N	56W
-1370 Aug 30	16:03:49	32355	1511	-41674	35	P	t-	-0.9092	1.2352	0.1453	308.7	92.4	-	15S	105W
-1369 Jan 25	20:21:47	32347	1510	-41669	2	N	-a	-1.0707	0.8808	-0.0942	234.7	-	-	21N	167W
-1369 Feb 24	05:29:53	32345	1510	-41668	40	N	a-	1.5280	0.0315	-0.9233	47.4	-	-	16N	57E
-1369 Jul 21	01:56:41	32337	1509	-41663	7	N	-t	1.2388	0.6035	-0.4330	218.7	-	-	22S	105E
-1368 Jan 15	08:49:03	32327	1507	-41657	12	T	-a	-0.3995	2.1387	1.1114	334.5	203.9	50.5	23N	6E
-1368 Jul 09	11:56:19	32317	1506	-41651	17	T	-a	0.4344	2.0503	1.0714	318.7	197.0	40.2	23S	45W
-1367 Jan 03	14:07:27	32307	1504	-41645	22	T	p-	0.3166	2.3194	1.2354	363.1	219.9	73.3	24N	75W
-1367 Jun 29	03:38:25	32297	1503	-41639	27	T	p-	-0.3140	2.2538	1.3095	311.3	201.7	75.6	24S	78E
-1367 Dec 23	13:40:26	32288	1502	-41633	32	Nx	t-	1.0092	1.0584	-0.0448	292.3	-	-	24N	70W
-1366 May 20	13:05:00	32279	1501	-41628	-1	Ne	-a	1.4864	0.1159	-0.8549	93.4	-	-	15S	63W
-1366 Jun 18	20:41:06	32278	1500	-41627	37	N	a-	-1.0510	0.9056	-0.0470	236.0	-	-	24S	178W
-1366 Nov 12	22:55:02	32270	1499	-41622	4	N	-a	-1.2679	0.5523	-0.4889	205.8	-	-	14N	149E
-1365 May 09	23:47:25	32260	1498	-41616	9	P	-t	0.7809	1.4378	0.4126	307.2	143.6	-	13S	136E

-1365	Nov 02	10:19:24	32250	1497	-41610	14	P	-a	-0.5356	1.8692	0.8810	306.7	181.4	-	10N	23W
-1364	Apr 28	03:20:10	32240	1495	-41604	19	T+	pp	0.0184	2.8575	1.7916	373.1	235.5	106.4	10S	83E
-1364	Oct 22	01:43:48	32230	1494	-41598	24	T+	p-	0.1379	2.5901	1.6196	318.5	208.6	93.9	7N	106E
-1363	Apr 17	03:57:02	32220	1492	-41592	29	P	t-	-0.7406	1.5300	0.4686	326.9	156.7	-	6S	75E
-1363	Oct 11	16:29:42	32211	1491	-41586	34	P	a-	0.8309	1.3325	0.3343	280.7	123.6	-	3N	115W
-1362	Mar 07	22:15:29	32202	1490	-41581	1	N	-h	1.2250	0.6078	-0.3872	207.9	-	-	11N	165E
-1362	Apr 06	08:57:20	32201	1490	-41580	39	N	h-	-1.4533	0.1997	-0.8166	128.0	-	-	2S	1E
-1362	Sep 01	10:34:46	32193	1489	-41575	6	N	-t	-1.2961	0.5154	-0.5550	209.5	-	-	14S	23W
-1361	Feb 25	12:42:59	32183	1487	-41569	11	T	-a	0.4665	1.9809	1.0227	305.3	188.8	22.4	14N	52W
-1361	Aug 21	11:00:00	32173	1486	-41563	16	P	-t	-0.6018	1.7978	0.7104	348.7	187.1	-	17S	30W
-1360	Feb 15	05:14:22	32163	1484	-41557	21	T-	p-	-0.2387	2.4011	1.4384	317.2	206.3	85.8	17N	60E
-1360	Aug 09	12:19:44	32153	1483	-41551	26	T+	pp	0.1378	2.6324	1.5783	361.3	228.0	99.5	20S	50W
-1359	Feb 03	19:08:56	32143	1482	-41545	31	P	a-	-0.9816	1.0610	0.0527	263.9	52.1	-	19N	149W
-1359	Jul 29	20:28:54	32134	1480	-41539	36	P	a-	0.8671	1.2647	0.2693	280.3	113.9	-	21S	173W
-1359	Dec 25	09:03:31	32125	1479	-41534	3	N	-t	1.1987	0.7071	-0.3892	245.6	-	-	25N	1W
-1358	Jun 20	04:00:23	32116	1478	-41528	8	P	-a	-0.9702	1.0481	0.1070	246.4	70.2	-	24S	72E
-1358	Jul 19	11:05:49	32114	1478	-41527	46	Nb	a-	1.5377	0.0125	-0.9397	30.0	-	-	22S	33W
-1358	Dec 14	08:07:40	32106	1476	-41522	13	P	-t	0.5265	1.9421	0.8426	355.1	197.9	-	23N	11E
-1357	Jun 09	20:38:18	32096	1475	-41516	18	T-	p-	-0.2459	2.3876	1.4256	322.2	209.4	86.4	22S	178W
-1357	Dec 03	10:43:53	32086	1474	-41510	23	T-	p-	-0.1756	2.5635	1.5085	353.3	222.0	94.3	20N	29W
-1356	May 29	08:46:09	32076	1472	-41504	28	P	t-	0.5410	1.8719	0.8588	327.4	190.4	-	19S	0W
-1356	Nov 21	20:37:15	32067	1471	-41498	33	P	a-	-0.8451	1.3069	0.3077	278.1	118.7	-	17N	178W
-1355	Apr 18	23:03:29	32058	1470	-41493	0	N	-t	-1.4837	0.1714	-0.8994	127.2	-	-	7S	147E
-1355	May 18	13:42:43	32057	1470	-41492	38	N	t-	1.3518	0.4075	-0.6517	189.7	-	-	15S	74W
-1355	Oct 13	00:53:10	32049	1469	-41487	5	N	-a	1.2025	0.6380	-0.3350	202.8	-	-	4N	118E
-1355	Nov 11	11:27:28	32047	1468	-41486	43	N	a-	-1.4656	0.1547	-0.8172	104.1	-	-	13N	40W
-1354	Apr 08	00:11:33	32039	1467	-41481	10	P	-t	-0.7189	1.5654	0.5128	325.2	161.1	-	3S	132E
-1354	Oct 02	14:41:18	32029	1466	-41475	15	P	-a	0.5567	1.8422	0.8309	316.0	182.5	-	1S	88W
-1353	Mar 28	07:06:43	32019	1464	-41469	20	T+	pp	0.0694	2.7318	1.7296	341.5	221.5	101.3	2N	29E
-1353	Sep 21	22:23:28	32009	1463	-41463	25	T-	pp	-0.1532	2.6100	1.5445	361.6	226.7	97.5	6S	157E
-1352	Mar 16	20:44:37	32000	1462	-41457	30	P	a-	0.7984	1.3722	0.4135	276.0	133.5	-	7N	174W
-1352	Sep 09	23:25:06	31990	1460	-41451	35	P	t-	-0.8740	1.3017	0.2078	315.1	109.5	-	11S	142E
-1351	Feb 05	04:39:19	31982	1459	-41446	2	N	-a	-1.0990	0.8285	-0.1456	229.3	-	-	18N	68E
-1351	Mar 06	13:28:22	31980	1459	-41445	40	N	a-	1.4867	0.1062	-0.8465	86.5	-	-	12N	64W
-1351	Jul 31	09:05:39	31972	1458	-41440	7	N	-t	1.2938	0.5023	-0.5339	200.8	-	-	20S	3W
-1351	Aug 29	23:35:32	31970	1458	-41439	45	N	t-	-1.5498	0.0502	-1.0210	68.3	-	-	15S	140E
-1350	Jan 25	16:55:59	31962	1457	-41434	12	T	-a	-0.4217	2.0981	1.0704	334.3	202.3	40.8	21N	117W
-1350	Jul 20	19:24:15	31952	1455	-41428	17	P	-a	0.4949	1.9390	0.9607	313.6	189.8	-	23S	158W
-1349	Jan 14	21:57:36	31942	1454	-41422	22	T	p-	0.2990	2.3513	1.2680	364.6	221.7	77.4	23N	167E
-1349	Jul 10	11:12:41	31933	1453	-41416	27	T-	p-	-0.2477	2.3761	1.4305	313.7	205.4	85.2	24S	36W

-1348	Jan 03	21:29:32	31923	1451	-41410	32	Nx	t-	0.9951	1.0828	-0.0174	294.4	-	-	25N	172E
-1348	Jun 29	04:06:30	31913	1450	-41404	37	P	a-	-0.9849	1.0289	0.0725	249.0	58.9	-	25S	70E
-1348	Nov 23	07:25:08	31905	1449	-41399	4	N	-a	-1.2650	0.5562	-0.4820	205.6	-	-	17N	20E
-1347	May 20	06:29:53	31895	1447	-41393	9	P	-t	0.8653	1.2845	0.2562	296.7	116.2	-	16S	33E
-1347	Nov 12	19:07:28	31885	1446	-41387	14	P	-a	-0.5353	1.8693	0.8824	306.0	181.2	-	14N	156W
-1346	May 09	09:40:25	31876	1445	-41381	19	T+	pp	0.1063	2.6962	1.6301	372.7	234.5	103.6	13S	14W
-1346	Nov 02	10:33:39	31866	1443	-41375	24	T+	p-	0.1345	2.5971	1.6250	318.8	208.8	94.1	11N	28W
-1345	Apr 28	10:24:50	31856	1442	-41369	29	P	t-	-0.6561	1.6832	0.6255	335.6	176.2	-	10S	25W
-1345	Oct 23	01:05:18	31846	1441	-41363	34	P	a-	0.8267	1.3425	0.3399	282.5	124.8	-	8N	114E
-1344	Mar 18	05:45:25	31838	1440	-41358	1	N	-h	1.2761	0.5111	-0.4779	191.5	-	-	7N	50E
-1344	Apr 16	15:56:17	31836	1439	-41357	39	N	h-	-1.3772	0.3364	-0.6743	163.3	-	-	7S	107W
-1344	Sep 11	18:07:36	31828	1438	-41352	6	N	-t	-1.3309	0.4545	-0.6217	198.6	-	-	10S	139W
-1343	Mar 07	20:38:09	31819	1437	-41346	11	P	-a	0.5133	1.8929	0.9389	301.3	183.4	-	10N	173W
-1343	Aug 31	18:12:17	31809	1435	-41340	16	P	-t	-0.6455	1.7193	0.6287	344.5	178.4	-	14S	140W
-1342	Feb 25	13:17:38	31799	1434	-41334	21	T-	p-	-0.1985	2.4741	1.5129	318.8	208.5	90.4	13N	62W
-1342	Aug 20	19:39:39	31789	1433	-41328	26	T+	pp	0.0889	2.7223	1.6678	361.2	228.6	102.1	17S	162W
-1341	Feb 15	03:04:02	31779	1431	-41322	31	P	a-	-0.9504	1.1183	0.1100	270.1	74.9	-	16N	91E
-1341	Aug 10	04:06:30	31770	1430	-41316	36	P	a-	0.8136	1.3628	0.3675	286.8	130.8	-	19S	71E
-1340	Jan 05	16:54:57	31762	1429	-41311	3	N	-t	1.2137	0.6790	-0.4162	241.6	-	-	25N	119W
-1340	Jun 30	11:31:21	31752	1428	-41305	8	N	-a	-1.0375	0.9256	-0.0173	234.7	-	-	25S	42W
-1340	Jul 29	18:51:41	31750	1427	-41304	46	N	a-	1.4824	0.1146	-0.8390	90.0	-	-	20S	151W
-1340	Dec 24	16:04:40	31742	1426	-41299	13	P	-t	0.5345	1.9258	0.8296	353.5	196.6	-	24N	108W
-1339	Jun 20	03:55:36	31732	1425	-41293	18	T	-a	-0.3196	2.2544	1.2885	320.5	205.3	74.9	23S	71E
-1339	Dec 13	19:07:02	31723	1424	-41287	23	T-	p-	-0.1737	2.5648	1.5140	351.9	221.6	94.5	22N	155W
-1338	Jun 09	15:34:23	31713	1422	-41281	28	T	t-	0.4624	2.0183	1.0010	335.0	201.0	5.0	21S	104W
-1338	Dec 03	05:23:23	31703	1421	-41275	33	P	a-	-0.8443	1.3069	0.3106	277.3	118.9	-	20N	50E
-1337	Apr 30	05:24:29	31695	1420	-41270	0	Ne	-t	-1.5661	0.0195	-1.0500	43.5	-	-	12S	50E
-1337	May 29	20:03:49	31693	1420	-41269	38	N	t-	1.2683	0.5617	-0.4995	220.0	-	-	18S	171W
-1337	Oct 24	09:38:12	31685	1418	-41264	5	N	-a	1.2088	0.6279	-0.3480	201.8	-	-	9N	15W
-1337	Nov 22	20:21:33	31684	1418	-41263	43	N	a-	-1.4660	0.1540	-0.8179	103.8	-	-	16N	175W
-1336	Apr 18	06:50:12	31675	1417	-41258	10	P	-t	-0.7940	1.4252	0.3773	314.2	140.8	-	7S	29E
-1336	Oct 12	23:06:11	31666	1416	-41252	15	P	-a	0.5681	1.8239	0.8074	316.5	181.1	-	4N	144E
-1335	Apr 07	14:20:22	31656	1414	-41246	20	T+	pp	0.0035	2.8497	1.8533	340.1	221.4	102.4	2S	82W
-1335	Oct 02	06:16:15	31646	1413	-41240	25	T-	pp	-0.1344	2.6473	1.5761	363.6	227.7	99.0	1S	37E
-1334	Mar 28	04:24:23	31636	1412	-41234	30	P	a-	0.7399	1.4775	0.5230	282.0	147.5	-	3N	68E
-1334	Sep 21	06:54:48	31627	1410	-41228	35	P	t-	-0.8457	1.3554	0.2578	320.0	121.2	-	6S	28E
-1333	Feb 16	12:46:23	31619	1409	-41223	2	N	-a	-1.1355	0.7611	-0.2121	221.7	-	-	15N	55W
-1333	Mar 17	21:17:24	31617	1409	-41222	40	N	a-	1.4382	0.1944	-0.7565	116.1	-	-	8N	176E
-1333	Aug 11	16:25:22	31609	1408	-41217	7	N	-t	1.3409	0.4158	-0.6202	183.6	-	-	18S	114W
-1333	Sep 10	07:07:28	31607	1408	-41216	45	N	t-	-1.5134	0.1175	-0.9546	103.7	-	-	11S	25E



-1332 Feb 06	00:51:25	31599	1407	-41211	12	T	-a	-0.4526	2.0415	1.0138	333.4	199.6	18.4	19N	123E
-1332 Jul 31	03:01:57	31589	1405	-41205	17	P	-a	0.5481	1.8413	0.8631	308.7	182.5	-	21S	86E
-1331 Jan 25	05:36:57	31580	1404	-41199	22	T	pp	0.2732	2.3981	1.3159	366.3	224.0	82.8	22N	51E
-1331 Jul 20	18:54:22	31570	1403	-41193	27	T-	p-	-0.1875	2.4874	1.5399	315.4	207.9	91.4	23S	152W
-1330 Jan 14	05:11:49	31560	1401	-41187	32	P	t-	0.9752	1.1173	0.0208	297.5	35.5	-	24N	57E
-1330 Jul 10	11:34:31	31551	1400	-41181	37	P	a-	-0.9215	1.1473	0.1867	260.4	93.2	-	25S	43W
-1330 Dec 04	15:57:07	31542	1399	-41176	4	N	-a	-1.2613	0.5611	-0.4733	205.7	-	-	20N	109W
-1329 May 31	13:08:28	31533	1398	-41170	9	P	-t	0.9512	1.1287	0.0967	284.2	73.3	-	19S	68W
-1329 Nov 24	03:57:54	31523	1396	-41164	14	P	-a	-0.5335	1.8715	0.8864	305.4	181.1	-	18N	70E
-1328 May 19	15:57:31	31513	1395	-41158	19	T+	pp	0.1964	2.5312	1.4645	371.1	231.4	96.0	17S	110W
-1328 Nov 12	19:26:52	31504	1394	-41152	24	T+	p-	0.1342	2.5983	1.6249	319.1	208.9	94.1	15N	163W
-1327 May 08	16:51:40	31494	1392	-41146	29	P	t-	-0.5698	1.8400	0.7856	343.1	191.7	-	14S	124W
-1327 Nov 02	09:44:18	31484	1391	-41140	34	P	a-	0.8260	1.3458	0.3392	283.7	125.0	-	12N	18W
-1326 Mar 29	13:11:36	31476	1390	-41135	1	N	-a	1.3309	0.4076	-0.5756	172.0	-	-	3N	64W
-1326 Apr 27	22:54:10	31474	1390	-41134	39	N	a-	-1.2990	0.4773	-0.5283	191.0	-	-	11S	146E
-1326 Sep 23	01:47:08	31466	1389	-41129	6	N	-t	-1.3595	0.4047	-0.6770	189.0	-	-	6S	104E
-1325 Mar 19	04:26:04	31457	1387	-41123	11	P	-a	0.5665	1.7935	0.8432	296.5	176.6	-	6N	68E
-1325 Sep 12	01:34:05	31447	1386	-41117	16	P	-t	-0.6815	1.6548	0.5613	340.8	170.3	-	10S	108E
-1324 Mar 07	21:12:31	31437	1385	-41111	21	T-	p-	-0.1517	2.5594	1.5995	320.4	210.6	94.4	10N	177E
-1324 Aug 31	03:10:22	31427	1383	-41105	26	T+	pp	0.0482	2.7973	1.7424	360.6	228.6	103.3	13S	84E
-1323 Feb 25	10:49:20	31418	1382	-41099	31	P	a-	-0.9121	1.1887	0.1803	277.3	95.2	-	13N	27W
-1323 Aug 20	11:54:27	31408	1381	-41093	36	P	a-	0.7678	1.4468	0.4515	291.7	142.7	-	16S	47W
-1322 Jan 16	00:37:54	31400	1379	-41088	3	N	-t	1.2350	0.6391	-0.4545	235.5	-	-	24N	125E
-1322 Jul 11	19:06:53	31390	1378	-41082	8	N	-a	-1.1009	0.8103	-0.1349	222.5	-	-	25S	157W
-1322 Aug 10	02:44:58	31389	1378	-41081	46	N	a-	1.4329	0.2064	-0.7489	119.6	-	-	18S	90E
-1321 Jan 04	23:56:01	31381	1377	-41076	13	P	-t	0.5476	1.8997	0.8076	351.4	194.5	-	24N	134E
-1321 Jul 01	11:15:21	31371	1376	-41070	18	T	-a	-0.3906	2.1265	1.1560	318.3	200.2	57.6	24S	40W
-1321 Dec 25	03:25:29	31361	1374	-41064	23	T-	p-	-0.1671	2.5745	1.5287	350.5	221.3	95.0	23N	80E
-1320 Jun 19	22:24:00	31351	1373	-41058	28	T	t-	0.3857	2.1615	1.1393	341.6	209.6	57.2	23S	153E
-1320 Dec 13	14:07:17	31342	1372	-41052	33	P	a-	-0.8410	1.3114	0.3185	276.8	120.0	-	22N	82W
-1319 Jun 09	02:25:05	31332	1370	-41046	38	N	t-	1.1849	0.7159	-0.3477	245.3	-	-	20S	92E
-1319 Nov 03	18:26:58	31324	1369	-41041	5	N	-a	1.2121	0.6231	-0.3554	201.4	-	-	13N	149W
-1319 Dec 03	05:15:15	31322	1369	-41040	43	N	a-	-1.4662	0.1533	-0.8181	103.5	-	-	19N	50E
-1318 Apr 29	13:25:33	31314	1368	-41035	10	P	-t	-0.8725	1.2790	0.2355	301.5	113.3	-	11S	72W
-1318 Oct 24	07:36:27	31305	1367	-41029	15	P	-a	0.5742	1.8151	0.7937	317.4	180.5	-	8N	14E
-1317 Apr 18	21:27:55	31295	1365	-41023	20	T-	pp	-0.0684	2.7279	1.7368	338.1	220.3	101.2	6S	168E
-1317 Oct 13	14:16:29	31285	1364	-41017	25	T-	pp	-0.1226	2.6716	1.5952	365.4	228.5	99.8	3N	85W
-1316 Apr 07	11:57:51	31275	1363	-41011	30	P	a-	0.6756	1.5934	0.6428	288.1	160.2	-	1S	48W
-1316 Oct 01	14:33:11	31266	1361	-41005	35	P	t-	-0.8244	1.3962	0.2954	323.6	129.0	-	2S	89W
-1315 Feb 26	20:45:18	31258	1360	-41000	2	N	-a	-1.1782	0.6824	-0.2901	212.1	-	-	12N	177W

-1315 Mar 28	05:00:15	31256	1360	-40999	40	N	a-	1.3850	0.2913	-0.6582	141.0	-	-	3N	58E
-1315 Aug 21	23:55:25	31248	1359	-40994	7	N	-t	1.3806	0.3431	-0.6930	167.3	-	-	15S	132E
-1315 Sep 20	14:49:33	31246	1359	-40993	45	N	t-	-1.4841	0.1717	-0.9011	124.5	-	-	7S	92W
-1314 Feb 16	08:38:28	31238	1358	-40988	12	P	-a	-0.4894	1.9739	0.9462	331.9	195.9	-	16N	5E
-1314 Aug 11	10:46:54	31229	1356	-40982	17	P	-a	0.5959	1.7538	0.7753	303.8	175.1	-	19S	31W
-1313 Feb 05	13:08:09	31219	1355	-40976	22	T+	pp	0.2414	2.4557	1.3750	368.0	226.5	88.3	20N	62W
-1313 Aug 01	02:42:24	31209	1354	-40970	27	T-	p-	-0.1329	2.5887	1.6390	316.7	209.5	95.2	22S	90E
-1312 Jan 25	12:45:53	31200	1352	-40964	32	P	t-	0.9486	1.1640	0.0717	301.5	65.4	-	23N	57W
-1312 Jul 20	19:08:54	31190	1351	-40958	37	P	a-	-0.8641	1.2551	0.2897	270.0	114.7	-	24S	157W
-1312 Dec 15	00:26:49	31182	1350	-40953	4	N	-a	-1.2597	0.5618	-0.4684	205.0	-	-	21N	123E
-1311 Jun 10	19:48:10	31172	1349	-40947	9	N	-t	1.0351	0.9770	-0.0591	269.8	-	-	21S	169W
-1311 Dec 04	12:46:53	31163	1347	-40941	14	P	-a	-0.5333	1.8708	0.8880	304.7	180.9	-	20N	63W
-1310 May 30	22:15:02	31153	1346	-40935	19	T	pt	0.2857	2.3679	1.3003	368.2	226.2	82.4	19S	154E
-1310 Nov 24	04:20:19	31143	1345	-40929	24	T+	p-	0.1342	2.5987	1.6246	319.4	209.0	94.1	18N	63E
-1309 May 19	23:17:04	31134	1343	-40923	29	P	t-	-0.4812	2.0010	0.9494	349.3	204.2	-	17S	138E
-1309 Nov 13	18:25:24	31124	1342	-40917	34	P	a-	0.8276	1.3444	0.3344	284.6	124.5	-	16N	149W
-1308 Apr 08	20:31:31	31116	1341	-40912	1	N	-a	1.3913	0.2939	-0.6839	147.0	-	-	1S	177W
-1308 May 08	05:50:13	31114	1341	-40911	39	N	a-	-1.2180	0.6238	-0.3773	214.3	-	-	14S	40E
-1308 Oct 03	09:34:29	31106	1340	-40906	6	N	-t	-1.3811	0.3676	-0.7191	181.3	-	-	2S	15W
-1307 Mar 29	12:07:15	31097	1338	-40900	11	P	-a	0.6255	1.6835	0.7366	290.9	167.9	-	2N	50W
-1307 Sep 22	09:06:25	31087	1337	-40894	16	P	-t	-0.7088	1.6059	0.5098	337.7	163.6	-	6S	7W
-1306 Mar 19	04:58:20	31077	1336	-40888	21	T-	pp	-0.0977	2.6580	1.6991	321.8	212.5	97.7	6N	58E
-1306 Sep 11	10:51:31	31068	1334	-40882	26	T+	pp	0.0151	2.8581	1.8028	359.7	228.2	103.5	9S	33W
-1305 Mar 08	18:24:13	31058	1333	-40876	31	P	h-	-0.8660	1.2733	0.2647	285.2	114.4	-	9N	143W
-1305 Aug 31	19:52:18	31048	1332	-40870	36	P	a-	0.7293	1.5176	0.5221	295.4	151.3	-	13S	168W
-1304 Jan 27	08:11:53	31040	1331	-40865	3	N	-t	1.2632	0.5863	-0.5052	226.9	-	-	22N	11E
-1304 Jul 22	02:48:35	31031	1329	-40859	8	N	-a	-1.1594	0.7046	-0.2435	209.9	-	-	24S	87E
-1304 Aug 20	10:47:14	31029	1329	-40858	46	N	a-	1.3903	0.2855	-0.6718	139.6	-	-	15S	32W
-1303 Jan 15	07:42:14	31021	1328	-40853	13	P	-t	0.5656	1.8644	0.7769	348.7	191.5	-	24N	17E
-1303 Jul 11	18:38:17	31011	1327	-40847	18	T	-a	-0.4581	2.0050	1.0295	315.7	194.0	26.1	24S	151W
-1302 Jan 04	11:41:16	31002	1326	-40841	23	T-	p-	-0.1573	2.5897	1.5493	349.0	221.2	95.9	24N	44W
-1302 Jul 01	05:15:20	30992	1324	-40835	28	T	p-	0.3110	2.3013	1.2737	347.2	216.3	76.8	23S	49E
-1302 Dec 24	22:48:34	30982	1323	-40829	33	P	a-	-0.8352	1.3200	0.3309	276.5	121.8	-	23N	148E
-1301 Jun 20	08:47:54	30973	1322	-40823	38	N	t-	1.1026	0.8683	-0.1981	266.6	-	-	22S	5W
-1301 Nov 15	03:17:47	30965	1321	-40818	5	N	-a	1.2137	0.6212	-0.3592	201.5	-	-	17N	77E
-1301 Dec 14	14:06:44	30963	1320	-40817	43	N	a-	-1.4649	0.1552	-0.8153	104.2	-	-	21N	83W
-1300 May 09	20:01:03	30955	1319	-40812	10	P	-t	-0.9513	1.1325	0.0929	287.2	72.4	-	15S	173W
-1300 Nov 03	16:08:33	30945	1318	-40806	15	P	-a	0.5783	1.8099	0.7842	318.4	180.2	-	12N	116W

# 13TH CENTURY BCE

In the 13th century BCE the total number of lunar eclipses was 251 lunar eclipses: 92 penumbral lunar eclipses, 99 partial lunar eclipses, 60 total lunar eclipses (51 central total lunar eclipses, 9 non-central total lunar eclipses).

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-1299 Apr 29	04:35:32	30936	1317	-40800	20	T- pp	-0.1413	2.5917	1.6055	335.3	218.1	97.4	10S	59E	
-1299 Oct 23	22:21:02	30926	1315	-40794	25	T- pp	-0.1147	2.6882	1.6074	366.9	229.1	100.3	8N	151E	
-1298 Apr 18	19:27:10	30917	1314	-40788	30	P a-	0.6074	1.7170	0.7697	293.8	171.4	-	6S	163W	
-1298 Oct 12	22:18:57	30907	1313	-40782	35	P t-	-0.8089	1.4259	0.3226	326.2	134.2	-	2N	153E	
-1297 Mar 10	04:34:20	30899	1312	-40777	2	N -a	-1.2285	0.5897	-0.3822	199.5	-	-	8N	64E	
-1297 Apr 08	12:35:36	30897	1311	-40776	40	N a-	1.3258	0.3996	-0.5491	163.7	-	-	1S	59W	
-1297 Sep 02	07:37:10	30889	1310	-40771	7	N -h	1.4115	0.2863	-0.7497	153.2	-	-	12S	15E	
-1297 Oct 01	22:41:58	30888	1310	-40770	45	N h-	-1.4622	0.2120	-0.8611	137.5	-	-	3S	148E	
-1296 Feb 27	16:12:52	30880	1309	-40765	12	P -a	-0.5357	1.8890	0.8611	329.4	190.4	-	12N	110W	
-1296 Aug 21	18:43:18	30870	1308	-40759	17	P -a	0.6348	1.6825	0.7036	299.5	168.4	-	16S	152W	
-1295 Feb 15	20:28:00	30860	1306	-40753	22	T+ pp	0.2010	2.5291	1.4501	369.8	229.1	94.1	17N	174W	
-1295 Aug 11	10:38:13	30851	1305	-40747	27	T- p-	-0.0847	2.6785	1.7261	317.6	210.4	97.4	19S	30W	
-1294 Feb 04	20:11:52	30841	1304	-40741	32	P t-	0.9150	1.2233	0.1357	306.4	89.1	-	20N	170W	
-1294 Aug 01	02:48:31	30832	1303	-40735	37	P a-	-0.8116	1.3540	0.3834	278.3	130.4	-	22S	87E	
-1294 Dec 26	08:53:59	30824	1302	-40730	4	N -a	-1.2613	0.5565	-0.4688	203.3	-	-	22N	4W	
-1293 Jun 22	02:26:57	30814	1300	-40724	9	N -t	1.1184	0.8263	-0.2144	253.1	-	-	22S	90E	
-1293 Dec 15	21:35:12	30804	1299	-40718	14	P -a	-0.5343	1.8676	0.8876	303.8	180.7	-	22N	164E	
-1292 Jun 10	04:33:09	30795	1298	-40712	19	T -t	0.3745	2.2057	1.1367	364.0	218.8	58.9	21S	58E	
-1292 Dec 04	13:13:07	30785	1296	-40706	24	T+ p-	0.1337	2.5999	1.6254	319.7	209.2	94.2	21N	71W	
-1291 May 30	05:44:58	30776	1295	-40700	29	T t-	-0.3937	2.1605	1.1113	354.0	213.8	52.8	20S	39E	
-1291 Nov 24	03:07:25	30766	1294	-40694	34	P a-	0.8307	1.3403	0.3274	285.3	123.6	-	19N	79E	

-1290 Apr 20	03:48:24	30758	1293	-40689	1	N	-a	1.4550	0.1746	-0.7983	114.1	-	-	5S	72E
-1290 May 19	12:46:26	30756	1293	-40688	39	N	a-	-1.1356	0.7729	-0.2241	233.9	-	-	18S	66W
-1290 Oct 14	17:27:43	30748	1291	-40683	6	N	-t	-1.3975	0.3398	-0.7514	175.3	-	-	3N	135W
-1289 Apr 09	19:43:16	30739	1290	-40677	11	P	-a	0.6891	1.5654	0.6213	284.2	157.1	-	2S	166W
-1289 Oct 03	16:46:57	30729	1289	-40671	16	P	-t	-0.7299	1.5682	0.4700	335.1	158.0	-	1S	125W
-1288 Mar 29	12:36:49	30719	1288	-40665	21	T-	pp	-0.0377	2.7678	1.8093	323.0	213.8	99.7	1N	59W
-1288 Sep 21	18:43:18	30710	1286	-40659	26	T-	pp	-0.0102	2.8671	1.8118	358.7	227.5	103.2	5S	153W
-1287 Mar 19	01:50:25	30700	1285	-40653	31	P	h-	-0.8135	1.3700	0.3609	293.7	132.1	-	5N	103E
-1287 Sep 11	03:59:07	30691	1284	-40647	36	P	a-	0.6972	1.5765	0.5809	298.1	157.6	-	9S	68E
-1286 Feb 06	15:36:13	30683	1283	-40642	3	N	-t	1.2988	0.5198	-0.5693	215.0	-	-	20N	101W
-1286 Aug 02	10:37:00	30673	1281	-40636	8	N	-a	-1.2126	0.6086	-0.3428	197.2	-	-	22S	31W
-1286 Aug 31	18:57:53	30672	1281	-40635	46	N	a-	1.3541	0.3530	-0.6065	154.2	-	-	12S	157W
-1285 Jan 26	15:19:09	30664	1280	-40630	13	P	-t	0.5916	1.8139	0.7316	345.0	187.0	-	22N	98W
-1285 Jul 23	02:06:33	30654	1279	-40624	18	P	-a	-0.5205	1.8933	0.9122	312.7	187.0	-	23S	96E
-1284 Jan 15	19:49:59	30644	1278	-40618	23	T-	p-	-0.1406	2.6173	1.5829	347.7	221.3	97.1	23N	167W
-1284 Jul 11	12:11:04	30635	1276	-40612	28	T+	pp	0.2408	2.4329	1.3996	351.9	221.4	88.7	23S	56W
-1283 Jan 04	07:24:11	30625	1275	-40606	33	P	a-	-0.8242	1.3381	0.3533	277.0	125.2	-	23N	18E
-1283 Jun 30	15:14:53	30616	1274	-40600	38	Nx	t-	1.0234	1.0153	-0.0542	284.4	-	-	23S	103W
-1283 Nov 25	12:09:53	30608	1273	-40595	5	N	-a	1.2144	0.6207	-0.3612	201.8	-	-	20N	57W
-1283 Dec 24	22:55:09	30606	1272	-40594	43	N	a-	-1.4614	0.1610	-0.8082	106.0	-	-	22N	144E
-1282 May 21	02:35:07	30598	1271	-40589	10	N	-t	-1.0320	0.9826	-0.0534	270.7	-	-	18S	86E
-1282 Nov 15	00:44:00	30588	1270	-40583	15	P	-a	0.5789	1.8106	0.7812	319.7	180.4	-	16N	114E
-1281 May 10	11:40:24	30579	1269	-40577	20	T-	pp	-0.2178	2.4493	1.4673	331.8	214.5	90.5	14S	50W
-1281 Nov 04	06:29:52	30569	1268	-40571	25	T-	pp	-0.1111	2.6969	1.6122	368.3	229.7	100.6	12N	27E
-1280 Apr 29	02:53:03	30560	1266	-40565	30	P	a-	0.5357	1.8472	0.9025	299.0	181.3	-	10S	83E
-1280 Oct 23	06:12:10	30550	1265	-40559	35	P	t-	-0.7990	1.4451	0.3398	327.7	137.4	-	7N	32E
-1279 Mar 20	12:16:12	30542	1264	-40554	2	N	-a	-1.2840	0.4878	-0.4840	183.7	-	-	4N	54W
-1279 Apr 18	20:06:33	30541	1264	-40553	40	N	a-	1.2634	0.5139	-0.4345	183.9	-	-	5S	174W
-1279 Sep 12	15:28:06	30533	1263	-40548	7	N	-h	1.4360	0.2413	-0.7948	140.7	-	-	8S	105W
-1279 Oct 12	06:42:10	30531	1262	-40547	45	N	h-	-1.4456	0.2424	-0.8306	146.2	-	-	2N	25E
-1278 Mar 09	23:39:04	30523	1261	-40542	12	P	-h	-0.5879	1.7935	0.7654	326.0	183.2	-	8N	136E
-1278 Sep 02	02:47:54	30513	1260	-40536	17	P	-a	0.6676	1.6227	0.6431	295.6	162.2	-	12S	86E
-1277 Feb 27	03:37:40	30504	1259	-40530	22	T+	pp	0.1526	2.6169	1.5397	371.5	231.6	99.2	13N	77E
-1277 Aug 22	18:42:01	30494	1258	-40524	27	T-	pp	-0.0433	2.7560	1.8006	318.2	210.8	98.4	16S	153W
-1276 Feb 16	03:29:04	30485	1256	-40518	32	P	t-	0.8738	1.2964	0.2136	312.1	110.4	-	17N	80E
-1276 Aug 11	10:35:19	30475	1255	-40512	37	P	a-	-0.7656	1.4412	0.4652	285.3	142.2	-	20S	31W
-1275 Jan 05	17:15:32	30467	1254	-40507	4	N	-a	-1.2681	0.5413	-0.4786	199.9	-	-	23N	130W
-1275 Feb 04	06:42:33	30466	1254	-40506	42	N	a-	1.5393	0.0550	-0.9873	69.0	-	-	21N	31E
-1275 Jul 02	09:10:16	30458	1253	-40501	9	N	-t	1.1969	0.6849	-0.3608	234.7	-	-	23S	12W
-1275 Jul 31	21:54:38	30456	1252	-40500	47	Nb	t-	-1.5595	0.0098	-1.0164	29.0	-	-	23S	159E

-1275 Dec 26	06:19:21	30448	1251	-40495	14	P	-a	-0.5390	1.8573	0.8805	302.7	179.9	-	23N	33E
-1274 Jun 21	10:53:45	30439	1250	-40489	19	P	-t	0.4609	2.0480	0.9773	358.7	209.3	-	23S	39W
-1274 Dec 15	22:03:13	30429	1249	-40483	24	T+	p-	0.1312	2.6042	1.6299	320.1	209.4	94.5	23N	156E
-1273 Jun 10	12:15:41	30419	1248	-40477	29	T	t-	-0.3077	2.3172	1.2699	357.4	220.8	77.7	22S	60W
-1273 Dec 05	11:46:57	30410	1246	-40471	34	P	a-	0.8326	1.3378	0.3227	286.1	123.2	-	22N	52W
-1272 Apr 30	11:02:19	30402	1245	-40466	1	Ne	-a	1.5216	0.0503	-0.9184	61.7	-	-	9S	39W
-1272 May 29	19:44:49	30400	1245	-40465	39	N	a-	-1.0538	0.9213	-0.0724	250.4	-	-	20S	172W
-1272 Oct 25	01:27:14	30392	1244	-40460	6	N	-t	-1.4081	0.3223	-0.7726	171.4	-	-	7N	103E
-1271 Apr 20	03:14:25	30383	1243	-40454	11	P	-a	0.7570	1.4397	0.4978	276.5	143.3	-	6S	78E
-1271 Oct 14	00:35:47	30373	1242	-40448	16	P	-t	-0.7446	1.5421	0.4425	333.1	153.8	-	3N	116E
-1270 Apr 09	20:07:59	30364	1240	-40442	21	T+	pp	0.0278	2.7862	1.8276	323.8	214.3	100.1	3S	174W
-1270 Oct 03	02:45:02	30354	1239	-40436	26	T-	pp	-0.0283	2.8338	1.7787	357.6	226.8	102.7	1S	84E
-1269 Mar 30	09:05:43	30345	1238	-40430	31	P	t-	-0.7528	1.4818	0.4718	302.6	149.1	-	1N	8W
-1269 Sep 22	12:16:11	30335	1236	-40424	36	P	a-	0.6729	1.6211	0.6253	299.8	161.9	-	5S	58W
-1268 Feb 17	22:50:53	30327	1235	-40419	3	N	-t	1.3417	0.4398	-0.6466	199.3	-	-	17N	149E
-1268 Mar 18	14:53:25	30326	1235	-40418	41	Nb	t-	-1.5569	0.0335	-1.0301	56.0	-	-	4N	94W
-1268 Aug 12	18:32:39	30318	1234	-40413	8	N	-a	-1.2596	0.5242	-0.4309	184.8	-	-	20S	151W
-1268 Sep 11	03:16:53	30316	1234	-40412	46	N	a-	1.3248	0.4080	-0.5539	164.9	-	-	8S	77E
-1267 Feb 05	22:49:38	30308	1233	-40407	13	P	-t	0.6234	1.7528	0.6760	340.5	181.1	-	20N	149E
-1267 Aug 02	09:40:32	30299	1232	-40401	18	P	-a	-0.5774	1.7920	0.8051	309.7	179.5	-	22S	18W
-1266 Jan 26	03:53:54	30289	1230	-40395	23	T-	p-	-0.1192	2.6535	1.6253	346.3	221.4	98.6	21N	72E
-1266 Jul 22	19:10:17	30280	1229	-40389	28	T+	pp	0.1743	2.5580	1.5187	355.7	225.1	96.4	23S	162W
-1265 Jan 15	15:55:16	30270	1228	-40383	33	P	a-	-0.8089	1.3637	0.3835	277.9	129.6	-	22N	110W
-1265 Jul 11	21:47:12	30260	1227	-40377	38	P	t-	0.9482	1.1551	0.0821	299.5	70.0	-	23S	158E
-1265 Dec 06	20:59:49	30253	1226	-40372	5	N	-a	1.2167	0.6169	-0.3661	201.7	-	-	22N	170E
-1264 Jan 05	07:37:30	30251	1225	-40371	43	N	a-	-1.4533	0.1751	-0.7924	110.5	-	-	22N	14E
-1264 May 31	09:13:08	30243	1224	-40366	10	N	-t	-1.1101	0.8378	-0.1953	252.8	-	-	21S	15W
-1264 Nov 25	09:18:28	30233	1223	-40360	15	P	-a	0.5801	1.8100	0.7776	320.9	180.6	-	19N	16W
-1263 May 20	18:47:12	30224	1222	-40354	20	T	-p	-0.2935	2.3086	1.3303	327.6	209.7	79.9	17S	158W
-1263 Nov 14	14:39:45	30214	1220	-40348	25	T-	pp	-0.1087	2.7027	1.6151	369.5	230.1	100.8	15N	97W
-1262 May 10	10:17:10	30205	1219	-40342	30	T	a-	0.4620	1.9815	1.0388	303.7	189.6	29.2	13S	30W
-1262 Nov 03	14:09:53	30195	1218	-40336	35	P	t-	-0.7927	1.4571	0.3508	328.6	139.3	-	11N	89W
-1261 Mar 31	19:47:31	30187	1217	-40331	2	N	-a	-1.3473	0.3718	-0.6003	162.6	-	-	1S	170W
-1261 Apr 30	03:30:52	30186	1217	-40330	40	N	a-	1.1959	0.6379	-0.3110	202.7	-	-	9S	72E
-1261 Sep 23	23:30:22	30178	1216	-40325	7	N	-h	1.4523	0.2112	-0.8245	131.6	-	-	3S	132E
-1261 Oct 23	14:50:36	30176	1215	-40324	45	N	h-	-1.4348	0.2617	-0.8104	151.3	-	-	6N	99W
-1260 Mar 20	06:53:35	30168	1214	-40319	12	P	-h	-0.6485	1.6825	0.6539	321.3	173.1	-	4N	25E
-1260 Sep 12	11:02:35	30159	1213	-40313	17	P	-a	0.6928	1.5769	0.5967	292.4	157.0	-	8S	40W
-1259 Mar 09	10:36:32	30149	1212	-40307	22	T+	pp	0.0958	2.7201	1.6448	372.9	233.7	103.4	9N	30W
-1259 Sep 02	02:54:26	30140	1211	-40301	27	T-	pp	-0.0091	2.8203	1.8618	318.6	210.9	98.6	13S	82E

-1258	Feb 26	10:37:09	30130	1209	-40295	32	P	t-	0.8246	1.3841	0.3065	318.4	130.2	-	14N	29W
-1258	Aug 22	18:28:32	30121	1208	-40289	37	P	a-	-0.7255	1.5177	0.5359	291.2	151.4	-	17S	151W
-1257	Jan 17	01:32:45	30113	1207	-40284	4	N	-a	-1.2791	0.5181	-0.4959	195.2	-	-	22N	106E
-1257	Feb 15	14:23:12	30111	1207	-40283	42	N	a-	1.5003	0.1230	-0.9124	102.1	-	-	18N	85W
-1257	Jul 13	15:56:23	30103	1206	-40278	9	N	-t	1.2717	0.5503	-0.5007	214.0	-	-	22S	114W
-1257	Aug 12	05:15:48	30102	1206	-40277	47	N	t-	-1.5138	0.0970	-0.9359	90.9	-	-	20S	47E
-1256	Jan 06	14:59:00	30094	1205	-40272	14	P	-a	-0.5479	1.8393	0.8660	301.3	178.7	-	23N	97W
-1256	Jul 01	17:19:05	30084	1203	-40266	19	P	-t	0.5431	1.8983	0.8254	352.4	197.8	-	23S	136W
-1256	Dec 26	06:50:26	30075	1202	-40260	24	T+	p-	0.1268	2.6120	1.6382	320.5	209.8	94.9	24N	24E
-1255	Jun 20	18:50:49	30066	1201	-40254	29	T-	pp	-0.2244	2.4693	1.4236	359.6	225.5	91.6	23S	159W
-1255	Dec 15	20:24:26	30056	1200	-40248	34	P	a-	0.8336	1.3370	0.3201	286.9	123.1	-	24N	179E
-1254	Jun 10	02:46:24	30047	1198	-40242	39	P	a-	-0.9735	1.0671	0.0763	264.3	62.7	-	23S	81E
-1254	Nov 05	09:29:51	30039	1197	-40237	6	N	-t	-1.4159	0.3094	-0.7886	168.5	-	-	11N	19W
-1253	May 01	10:41:52	30029	1196	-40231	11	P	-a	0.8284	1.3079	0.3676	267.4	125.5	-	10S	36W
-1253	Oct 25	08:31:01	30020	1195	-40225	16	P	-t	-0.7544	1.5244	0.4239	331.6	150.8	-	8N	5W
-1252	Apr 20	03:34:14	30010	1194	-40219	21	T+	pp	0.0971	2.6592	1.6999	324.0	213.9	98.4	7S	71E
-1252	Oct 13	10:54:03	30001	1192	-40213	26	T-	pp	-0.0414	2.8095	1.7551	356.4	226.0	102.2	4N	40W
-1251	Apr 09	16:14:23	29991	1191	-40207	31	P	t-	-0.6873	1.6026	0.5913	311.4	164.3	-	4S	118W
-1251	Oct 02	20:41:26	29982	1190	-40201	36	P	a-	0.6547	1.6545	0.6588	300.8	164.9	-	0S	173E
-1250	Feb 28	05:55:02	29974	1189	-40196	3	N	-t	1.3925	0.3451	-0.7385	178.1	-	-	13N	41E
-1250	Mar 29	21:40:37	29972	1189	-40195	41	N	t-	-1.4929	0.1506	-0.9124	117.8	-	-	0N	161E
-1250	Aug 24	02:36:06	29964	1188	-40190	8	N	-a	-1.3004	0.4514	-0.5077	173.0	-	-	17S	87E
-1250	Sep 22	11:44:14	29963	1187	-40189	46	N	a-	1.3021	0.4508	-0.5134	172.6	-	-	4S	52W
-1249	Feb 17	06:10:39	29955	1186	-40184	13	P	-t	0.6636	1.6761	0.6051	334.9	173.0	-	17N	37E
-1249	Aug 13	17:22:05	29945	1185	-40178	18	P	-a	-0.6273	1.7034	0.7103	306.7	171.8	-	19S	135W
-1248	Feb 06	11:48:43	29936	1184	-40172	23	T-	pp	-0.0890	2.7056	1.6839	344.9	221.6	100.1	19N	48W
-1248	Aug 02	02:17:14	29926	1183	-40166	28	T+	pp	0.1148	2.6703	1.6247	358.8	227.6	100.9	21S	91E
-1247	Jan 26	00:19:28	29917	1181	-40160	33	P	a-	-0.7873	1.4011	0.4256	279.6	135.5	-	21N	124E
-1247	Jul 22	04:25:16	29907	1180	-40154	38	P	t-	0.8772	1.2870	0.2104	312.1	110.1	-	22S	58E
-1247	Dec 17	05:47:51	29900	1179	-40149	5	N	-a	1.2207	0.6099	-0.3737	201.1	-	-	24N	37E
-1246	Jan 15	16:14:28	29898	1179	-40148	43	N	a-	-1.4410	0.1967	-0.7690	116.9	-	-	22N	116W
-1246	Jun 11	15:53:14	29890	1178	-40143	10	N	-t	-1.1875	0.6946	-0.3360	232.6	-	-	23S	116W
-1246	Dec 06	17:52:11	29881	1177	-40137	15	P	-a	0.5810	1.8095	0.7747	322.0	180.9	-	22N	145W
-1245	Jun 01	01:53:56	29871	1175	-40131	20	T	-p	-0.3701	2.1664	1.1911	322.7	203.5	63.5	20S	93E
-1245	Nov 25	22:50:55	29862	1174	-40125	25	T-	pp	-0.1079	2.7053	1.6154	370.5	230.6	100.9	19N	140E
-1244	May 20	17:40:32	29852	1173	-40119	30	T	a-	0.3873	2.1177	1.1763	307.7	196.4	59.6	17S	143W
-1244	Nov 13	22:10:33	29843	1172	-40113	35	P	t-	-0.7885	1.4649	0.3583	329.1	140.6	-	15N	149E
-1243	Apr 11	03:13:33	29835	1171	-40108	2	N	-a	-1.4142	0.2495	-0.7234	135.2	-	-	5S	76E
-1243	May 10	10:53:26	29833	1170	-40107	40	N	a-	1.1273	0.7644	-0.1855	219.6	-	-	13S	41W
-1243	Oct 04	07:41:09	29825	1169	-40102	7	N	-h	1.4629	0.1916	-0.8437	125.2	-	-	1N	7E

-1243	Nov 02	23:04:44	29824	1169	-40101	45	N	h-	-1.4276	0.2743	-0.7966	154.2	-	-	10N	136E
-1242	Mar 31	13:59:43	29816	1168	-40096	12	P	-t	-0.7150	1.5608	0.5315	315.2	159.7	-	0S	84W
-1242	Sep 23	19:25:12	29807	1167	-40090	17	P	-a	0.7120	1.5419	0.5610	289.8	152.7	-	4S	168W
-1241	Mar 20	17:26:35	29797	1166	-40084	22	T+	pp	0.0321	2.8363	1.7626	373.8	235.1	105.8	5N	134W
-1241	Sep 13	11:14:53	29788	1165	-40078	27	T+	pp	0.0183	2.8051	1.8434	319.0	210.9	98.5	9S	45W
-1240	Mar 08	17:37:06	29778	1163	-40072	32	P	t-	0.7680	1.4853	0.4128	325.1	148.5	-	10N	136W
-1240	Sep 02	02:30:14	29769	1162	-40066	37	P	a-	-0.6930	1.5802	0.5926	296.1	158.1	-	13S	87E
-1239	Jan 27	09:43:06	29761	1161	-40061	4	N	-a	-1.2963	0.4836	-0.5245	188.4	-	-	20N	18W
-1239	Feb 25	21:56:55	29759	1161	-40060	42	N	a-	1.4548	0.2032	-0.8256	129.6	-	-	14N	160E
-1239	Jul 23	22:48:07	29751	1160	-40055	9	N	-t	1.3408	0.4264	-0.6302	191.4	-	-	21S	142E
-1239	Aug 22	12:43:43	29750	1160	-40054	47	N	t-	-1.4742	0.1731	-0.8665	121.2	-	-	17S	66W
-1238	Jan 16	23:32:24	29742	1159	-40049	14	P	-a	-0.5622	1.8110	0.8415	299.4	176.7	-	22N	134E
-1238	Jul 12	23:50:34	29733	1157	-40043	19	P	-t	0.6199	1.7585	0.6834	345.4	184.4	-	23S	126E
-1237	Jan 06	15:30:36	29723	1156	-40037	24	T+	p-	0.1168	2.6301	1.6571	321.0	210.4	95.6	24N	107W
-1237	Jul 02	01:32:21	29714	1155	-40031	29	T-	pp	-0.1453	2.6140	1.5692	360.6	228.3	99.6	24S	99E
-1237	Dec 27	04:55:58	29704	1154	-40025	34	P	a-	0.8305	1.3433	0.3251	288.3	124.3	-	25N	51E
-1236	Jun 20	09:53:03	29695	1152	-40019	39	P	a-	-0.8960	1.2082	0.2196	275.8	103.8	-	24S	27W
-1236	Nov 15	17:34:19	29687	1151	-40014	6	N	-t	-1.4219	0.2996	-0.8005	166.3	-	-	15N	142W
-1235	May 11	18:07:13	29677	1150	-40008	11	P	-a	0.9015	1.1733	0.2339	257.1	102.0	-	14S	150W
-1235	Nov 04	16:32:29	29668	1149	-40002	16	P	-t	-0.7596	1.5150	0.4145	330.5	149.1	-	12N	127W
-1234	May 01	10:53:37	29659	1148	-39996	21	T+	-p	0.1716	2.5232	1.5628	323.6	212.4	94.0	11S	41W
-1234	Oct 24	19:11:31	29649	1147	-39990	26	T-	pp	-0.0483	2.7962	1.7429	355.1	225.3	101.8	8N	167W
-1233	Apr 20	23:14:29	29640	1145	-39984	31	P	t-	-0.6158	1.7347	0.7216	320.0	178.3	-	8S	134E
-1233	Oct 14	05:14:56	29630	1144	-39978	36	P	a-	0.6428	1.6762	0.6809	301.2	166.6	-	4N	43E
-1232	Mar 10	12:49:52	29622	1143	-39973	3	N	-t	1.4503	0.2376	-0.8430	149.2	-	-	10N	65W
-1232	Apr 09	04:19:58	29621	1143	-39972	41	N	t-	-1.4228	0.2789	-0.7837	158.8	-	-	4S	59E
-1232	Sep 03	10:48:01	29613	1142	-39967	8	N	-a	-1.3343	0.3913	-0.5719	162.3	-	-	13S	38W
-1232	Oct 02	20:19:35	29611	1142	-39966	46	N	a-	1.2861	0.4812	-0.4852	177.8	-	-	1N	177E
-1231	Feb 27	13:25:27	29604	1141	-39961	13	P	-t	0.7096	1.5889	0.5238	328.2	162.8	-	13N	73W
-1231	Aug 24	01:09:15	29594	1139	-39955	18	P	-a	-0.6719	1.6248	0.6255	303.9	163.9	-	16S	107E
-1230	Feb 16	19:38:24	29585	1138	-39949	23	T-	pp	-0.0536	2.7672	1.7522	343.5	221.6	101.3	16N	167W
-1230	Aug 13	09:29:49	29575	1137	-39943	28	T+	pp	0.0606	2.7731	1.7211	361.3	229.2	103.4	19S	19W
-1229	Feb 06	08:36:02	29566	1136	-39937	33	P	a-	-0.7589	1.4507	0.4801	282.1	142.4	-	18N	1W
-1229	Aug 02	11:11:16	29556	1134	-39931	38	P	t-	0.8125	1.4076	0.3273	322.5	135.0	-	20S	44W
-1229	Dec 28	14:30:33	29549	1133	-39926	5	N	-a	1.2289	0.5949	-0.3889	199.3	-	-	25N	93W
-1228	Jan 27	00:43:32	29547	1133	-39925	43	N	a-	-1.4226	0.2294	-0.7343	125.9	-	-	20N	116E
-1228	Jun 21	22:39:53	29539	1132	-39920	10	N	-t	-1.2600	0.5605	-0.4680	210.9	-	-	24S	141E
-1228	Jul 21	11:53:16	29538	1132	-39919	48	N	t-	1.5225	0.0943	-0.9650	93.1	-	-	21S	56W
-1228	Dec 17	02:20:36	29530	1131	-39914	15	P	-a	0.5858	1.8017	0.7650	322.8	180.6	-	24N	88E
-1227	Jun 11	09:05:24	29520	1130	-39908	20	T	-a	-0.4438	2.0301	1.0572	317.1	196.1	36.1	22S	16W

-1227 Dec 06	06:59:31	29511	1129	-39902	25	T-	pp	-0.1054	2.7106	1.6193	371.4	231.0	101.2	21N	17E
-1226 Jun 01	01:03:26	29502	1127	-39896	30	T	p-	0.3119	2.2558	1.3150	311.0	201.9	76.1	20S	105E
-1226 Nov 25	06:12:48	29492	1126	-39890	35	P	t-	-0.7853	1.4706	0.3646	329.3	141.6	-	18N	28E
-1225 Apr 22	10:31:37	29484	1125	-39885	2	Ne	-a	-1.4869	0.1168	-0.8574	93.9	-	-	9S	36W
-1225 May 21	18:12:37	29483	1125	-39884	40	N	a-	1.0559	0.8961	-0.0555	235.1	-	-	16S	152W
-1225 Oct 15	16:00:37	29475	1124	-39879	7	N	-a	1.4674	0.1828	-0.8515	122.0	-	-	6N	120W
-1225 Nov 14	07:22:41	29473	1124	-39878	45	N	a-	-1.4227	0.2823	-0.7864	155.9	-	-	14N	10E
-1224 Apr 10	20:56:20	29465	1123	-39873	12	P	-t	-0.7884	1.4268	0.3963	307.2	141.3	-	4S	169E
-1224 Oct 04	03:57:14	29456	1122	-39867	17	P	-a	0.7243	1.5196	0.5382	287.9	149.8	-	1N	62E
-1223 Mar 31	00:07:35	29447	1120	-39861	22	T-	pp	-0.0387	2.8233	1.7513	374.0	235.3	105.9	1N	123E
-1223 Sep 23	19:42:55	29437	1119	-39855	27	T+	pp	0.0393	2.7683	1.8033	319.3	210.7	98.1	4S	174W
-1222 Mar 20	00:29:31	29428	1118	-39849	32	P	t-	0.7046	1.5992	0.5318	331.7	165.1	-	6N	119E
-1222 Sep 13	10:39:13	29419	1117	-39843	37	P	a-	-0.6674	1.6302	0.6368	300.2	163.2	-	9S	37W
-1221 Feb 07	17:46:11	29411	1116	-39838	4	N	-a	-1.3200	0.4369	-0.5649	179.0	-	-	17N	139W
-1221 Mar 09	05:22:34	29409	1115	-39837	42	N	a-	1.4019	0.2969	-0.7251	154.6	-	-	10N	46E
-1221 Aug 04	05:45:59	29401	1114	-39832	9	N	-t	1.4038	0.3137	-0.7487	166.5	-	-	19S	36E
-1221 Sep 02	20:19:39	29400	1114	-39831	47	N	t-	-1.4416	0.2363	-0.8100	141.5	-	-	14S	178E
-1220 Jan 28	07:59:39	29392	1113	-39826	14	P	-a	-0.5819	1.7729	0.8072	297.1	173.9	-	20N	7E
-1220 Jul 23	06:29:04	29383	1112	-39820	19	P	-t	0.6909	1.6294	0.5517	337.9	169.3	-	22S	25E
-1219 Jan 17	00:05:14	29373	1111	-39814	24	T+	p-	0.1023	2.6560	1.6841	321.6	211.0	96.5	23N	125E
-1219 Jul 12	08:21:28	29364	1110	-39808	29	T-	pp	-0.0715	2.7489	1.7049	360.6	229.5	103.5	24S	4W
-1218 Jan 06	13:22:21	29354	1108	-39802	34	P	a-	0.8239	1.3559	0.3368	290.2	126.7	-	25N	76W
-1218 Jul 01	17:04:42	29345	1107	-39796	39	P	a-	-0.8215	1.3440	0.3571	285.3	129.3	-	25S	135W
-1218 Nov 27	01:39:21	29337	1106	-39791	6	N	-t	-1.4268	0.2912	-0.8103	164.4	-	-	18N	96E
-1217 May 23	01:31:56	29328	1105	-39785	11	P	-a	0.9751	1.0382	0.0990	245.4	67.6	-	17S	97E
-1217 Jun 21	08:07:38	29326	1105	-39784	49	Nb	a-	-1.5094	0.0612	-0.8849	66.0	-	-	25S	2W
-1217 Nov 16	00:35:55	29318	1104	-39779	16	P	-t	-0.7633	1.5078	0.4081	329.5	147.9	-	15N	111E
-1216 May 11	18:11:04	29309	1103	-39773	21	T+	-p	0.2469	2.3859	1.4235	322.5	209.5	86.3	14S	152W
-1216 Nov 04	03:34:02	29300	1101	-39767	26	T-	pp	-0.0515	2.7894	1.7380	353.9	224.7	101.5	12N	66E
-1215 May 01	06:09:35	29290	1100	-39761	31	P	t-	-0.5409	1.8732	0.8579	328.1	190.6	-	12S	28E
-1215 Oct 24	13:53:56	29281	1099	-39755	36	P	a-	0.6349	1.6903	0.6957	301.1	167.6	-	9N	89W
-1214 Mar 21	19:35:25	29273	1098	-39750	3	N	-t	1.5149	0.1177	-0.9601	106.1	-	-	6N	168W
-1214 Apr 20	10:51:52	29272	1098	-39749	41	N	t-	-1.3470	0.4180	-0.6445	192.3	-	-	8S	42W
-1214 Sep 14	19:07:55	29264	1097	-39744	8	N	-a	-1.3618	0.3429	-0.6244	153.0	-	-	9S	164W
-1214 Oct 14	05:01:30	29262	1097	-39743	46	N	a-	1.2754	0.5019	-0.4664	181.3	-	-	5N	44E
-1213 Mar 10	20:29:59	29254	1096	-39738	13	P	-t	0.7646	1.4850	0.4258	319.9	148.7	-	9N	179E
-1213 Sep 04	09:05:20	29245	1094	-39732	18	P	-a	-0.7084	1.5611	0.5554	301.6	156.6	-	12S	14W
-1212 Feb 28	03:19:09	29236	1093	-39726	23	T-	pp	-0.0097	2.8445	1.8360	341.9	221.4	101.9	12N	77E
-1212 Aug 23	16:50:23	29226	1092	-39720	28	T+	pp	0.0137	2.8623	1.8039	363.3	230.1	104.2	15S	130W
-1211 Feb 16	16:44:55	29217	1091	-39714	33	P	a-	-0.7237	1.5128	0.5470	285.1	150.3	-	15N	125W



-1211 Aug 12	18:05:46	29208	1090	-39708	38	P	t-	0.7545	1.5161	0.4319	331.0	152.7	-	18S	149W
-1210 Jan 07	23:08:12	29200	1089	-39703	5	N	-a	1.2410	0.5727	-0.4110	196.3	-	-	25N	137E
-1210 Feb 06	09:04:53	29198	1088	-39702	43	N	a-	-1.3985	0.2725	-0.6890	136.7	-	-	18N	10W
-1210 Jul 03	05:30:54	29190	1087	-39697	10	N	-t	-1.3297	0.4318	-0.5952	186.7	-	-	25S	38E
-1210 Aug 01	18:49:37	29189	1087	-39696	48	N	t-	1.4572	0.2144	-0.8455	138.6	-	-	20S	161W
-1210 Dec 28	10:45:14	29181	1086	-39691	15	P	-a	0.5929	1.7893	0.7512	323.3	180.0	-	24N	39W
-1209 Jun 22	16:20:13	29172	1085	-39685	20	P	-a	-0.5155	1.8975	0.9263	311.0	187.4	-	24S	125W
-1209 Dec 17	15:04:48	29162	1084	-39679	25	T-	pp	-0.1007	2.7197	1.6277	372.3	231.6	101.6	23N	105W
-1208 Jun 11	08:28:50	29153	1083	-39673	30	T+	p-	0.2383	2.3909	1.4500	313.5	206.0	86.6	22S	8W
-1208 Dec 05	14:15:22	29144	1081	-39667	35	P	t-	-0.7816	1.4766	0.3720	329.4	142.8	-	21N	94W
-1207 Jun 01	01:31:17	29134	1080	-39661	40	P	a-	0.9846	1.0282	0.0742	249.0	59.6	-	19S	96E
-1207 Oct 26	00:26:05	29127	1079	-39656	7	N	-a	1.4681	0.1810	-0.8520	121.0	-	-	10N	112E
-1207 Nov 24	15:43:10	29125	1079	-39655	45	N	a-	-1.4188	0.2879	-0.7780	156.8	-	-	17N	116W
-1206 Apr 22	03:46:45	29117	1078	-39650	12	P	-t	-0.8657	1.2857	0.2537	297.5	115.9	-	9S	64E
-1206 Oct 15	12:35:27	29108	1077	-39644	17	P	-a	0.7318	1.5060	0.5244	286.5	147.9	-	5N	70W
-1205 Apr 11	06:40:44	29098	1076	-39638	22	T-	pp	-0.1154	2.6818	1.6112	373.3	234.2	102.9	4S	22E
-1205 Oct 05	04:18:14	29089	1074	-39632	27	T+	-p	0.0539	2.7430	1.7749	319.7	210.6	97.7	0N	55E
-1204 Mar 30	07:15:52	29080	1073	-39626	32	P	t-	0.6355	1.7234	0.6610	338.1	179.9	-	1N	14E
-1204 Sep 23	18:54:48	29070	1072	-39620	37	P	a-	-0.6479	1.6687	0.6696	303.5	166.8	-	5S	163W
-1203 Feb 18	01:41:53	29063	1071	-39615	4	N	-a	-1.3503	0.3782	-0.6174	166.8	-	-	14N	100E
-1203 Mar 19	12:42:36	29061	1071	-39614	42	N	a-	1.3432	0.4013	-0.6143	177.1	-	-	6N	66W
-1203 Aug 14	12:51:49	29053	1070	-39609	9	N	-t	1.4592	0.2149	-0.8533	139.6	-	-	17S	71W
-1203 Sep 13	04:03:13	29052	1070	-39608	47	N	t-	-1.4157	0.2870	-0.7657	155.9	-	-	10S	61E
-1202 Feb 07	16:18:19	29044	1069	-39603	14	P	-a	-0.6092	1.7209	0.7593	294.0	169.9	-	18N	119W
-1202 Aug 03	13:16:00	29035	1068	-39597	19	P	-t	0.7551	1.5131	0.4327	330.2	152.7	-	20S	78W
-1201 Jan 28	08:30:53	29025	1066	-39591	24	T+	pp	0.0808	2.6949	1.7242	322.2	211.8	97.6	21N	2W
-1201 Jul 23	15:20:02	29016	1065	-39585	29	T-	pp	-0.0047	2.8714	1.8278	359.9	229.5	104.5	23S	109W
-1200 Jan 17	21:39:12	29007	1064	-39579	34	P	a-	0.8104	1.3808	0.3613	293.0	131.1	-	24N	160E
-1200 Jul 12	00:24:28	28997	1063	-39573	39	P	a-	-0.7528	1.4696	0.4838	293.0	147.2	-	24S	114E
-1200 Dec 07	09:43:16	28990	1062	-39568	6	N	-t	-1.4318	0.2823	-0.8197	162.2	-	-	20N	26W

## 12TH CENTURY BCE

**In the 12th century BCE the total number of lunar eclipses was 252 lunar eclipses:**

**96 penumbral lunar eclipses, 95 partial lunar eclipses, 61 total lunar eclipses  
(48 central total lunar eclipses, 13 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
	ECLIPSE														
-1199 Jan 06	03:55:08	28988	1062	-39567	44	N	t-	1.5727	0.0118	-1.0662	33.2	-	-	25N	64E
-1199 Jun 02	08:55:44	28980	1061	-39562	11	N	-a	1.0493	0.9023	-0.0373	232.2	-	-	19S	15W
-1199 Jul 01	15:37:04	28979	1060	-39561	49	N	a-	-1.4407	0.1876	-0.7589	114.1	-	-	25S	115W
-1199 Nov 26	08:42:31	28971	1059	-39556	16	P	-t	-0.7648	1.5043	0.4061	328.7	147.4	-	18N	12W
-1198 May 23	01:24:16	28962	1058	-39550	21	T	-a	0.3249	2.2441	1.2791	320.6	205.2	74.0	17S	97E
-1198 Nov 15	12:01:14	28952	1057	-39544	26	T-	pp	-0.0520	2.7872	1.7383	352.5	224.1	101.3	16N	62W
-1197 May 12	12:58:05	28943	1056	-39538	31	T	t-	-0.4613	2.0207	1.0027	335.6	201.4	8.3	15S	76W
-1197 Nov 04	22:38:34	28934	1055	-39532	36	P	a-	0.6310	1.6969	0.7033	300.7	167.9	-	13N	138E
-1196 Apr 30	17:18:57	28924	1053	-39526	41	N	t-	-1.2670	0.5650	-0.4978	220.9	-	-	12S	141W
-1196 Sep 25	03:34:20	28917	1052	-39521	8	N	-a	-1.3841	0.3041	-0.6673	144.9	-	-	5S	67E
-1196 Oct 24	13:48:03	28915	1052	-39520	46	N	a-	1.2684	0.5155	-0.4545	183.5	-	-	9N	90W
-1195 Mar 21	03:29:49	28907	1051	-39515	13	P	-t	0.8241	1.3729	0.3196	310.3	130.6	-	5N	71E
-1195 Sep 14	17:07:33	28898	1050	-39509	18	P	-a	-0.7392	1.5078	0.4958	299.7	149.8	-	8S	136W
-1194 Mar 10	10:53:47	28889	1049	-39503	23	T+	pp	0.0403	2.7850	1.7830	340.0	220.7	101.5	9N	39W
-1194 Sep 04	00:17:55	28879	1048	-39497	28	T-	pp	-0.0268	2.8414	1.7767	364.9	230.5	104.1	12S	116E
-1193 Feb 28	00:46:23	28870	1047	-39491	33	P	a-	-0.6819	1.5871	0.6260	288.6	158.5	-	12N	113E
-1193 Aug 24	01:09:53	28861	1045	-39485	38	P	t-	0.7039	1.6108	0.5228	337.8	165.6	-	15S	103E
-1192 Jan 19	07:37:16	28853	1044	-39480	5	N	-a	1.2600	0.5377	-0.4456	191.3	-	-	24N	10E
-1192 Feb 17	17:17:06	28851	1044	-39479	43	N	a-	-1.3673	0.3288	-0.6307	149.5	-	-	15N	135W
-1192 Jul 13	12:31:38	28844	1043	-39474	10	N	-t	-1.3925	0.3160	-0.7098	160.9	-	-	25S	68W
-1192 Aug 12	01:57:36	28842	1043	-39473	48	N	t-	1.3999	0.3200	-0.7406	167.3	-	-	18S	91E
-1191 Jan 07	19:02:11	28834	1042	-39468	15	P	-a	0.6060	1.7657	0.7267	323.2	178.3	-	24N	163W
-1191 Jul 02	23:40:52	28825	1041	-39462	20	P	-a	-0.5834	1.7725	0.8025	304.5	177.7	-	24S	124E
-1191 Dec 27	23:04:26	28816	1040	-39456	25	T-	pp	-0.0915	2.7364	1.6445	373.1	232.2	102.3	24N	135E
-1190 Jun 22	15:56:47	28807	1039	-39450	30	T+	p-	0.1663	2.5234	1.5817	315.4	208.8	93.4	23S	121W
-1190 Dec 16	22:14:24	28797	1037	-39444	35	P	t-	-0.7748	1.4878	0.3856	329.7	144.9	-	22N	146E
-1189 Jun 12	08:49:40	28788	1036	-39438	40	P	a-	0.9134	1.1604	0.2033	261.5	97.2	-	21S	15W
-1189 Nov 06	08:57:29	28780	1035	-39433	7	N	-a	1.4650	0.1857	-0.8453	122.0	-	-	14N	17W
-1189 Dec 06	00:03:53	28779	1035	-39432	45	N	a-	-1.4142	0.2946	-0.7678	157.9	-	-	20N	118E

-1188 May 02	10:30:40	28771	1034	-39427	12	P	-t	-0.9471	1.1374	0.1034	285.5	75.8	-	12S	39W
-1188 Oct 25	21:19:38	28762	1033	-39421	17	P	-a	0.7351	1.4999	0.5184	285.6	147.0	-	10N	157E
-1187 Apr 21	13:07:45	28752	1032	-39415	22	T-	pp	-0.1969	2.5317	1.4622	371.5	231.3	95.8	8S	77W
-1187 Oct 15	13:00:13	28743	1031	-39409	27	T+	-p	0.0630	2.7277	1.7568	320.1	210.5	97.4	5N	77W
-1186 Apr 10	13:55:14	28734	1029	-39403	32	P	t-	0.5597	1.8600	0.8024	344.1	193.0	-	3S	88W
-1186 Oct 05	03:17:51	28724	1028	-39397	37	P	a-	-0.6352	1.6947	0.6902	306.1	169.2	-	0S	69E
-1185 Mar 01	09:30:29	28717	1027	-39392	4	N	-a	-1.3872	0.3074	-0.6819	150.7	-	-	11N	19W
-1185 Mar 30	19:56:29	28715	1027	-39391	42	N	a-	1.2782	0.5174	-0.4920	198.0	-	-	2N	177W
-1185 Aug 25	20:05:44	28707	1026	-39386	9	N	-t	1.5075	0.1294	-0.9446	109.5	-	-	14S	179E
-1185 Sep 24	11:54:32	28706	1026	-39385	47	N	t-	-1.3964	0.3255	-0.7334	166.2	-	-	5S	59W
-1184 Feb 19	00:29:44	28698	1025	-39380	14	P	-a	-0.6428	1.6571	0.6994	290.3	164.6	-	15N	117E
-1184 Aug 13	20:12:45	28689	1024	-39374	19	P	-t	0.8113	1.4113	0.3282	322.7	135.1	-	18S	177E
-1183 Feb 07	16:50:02	28680	1023	-39368	24	T+	pp	0.0543	2.7430	1.7735	322.9	212.6	98.6	18N	128W
-1183 Aug 02	22:26:46	28670	1021	-39362	29	T+	pp	0.0563	2.7765	1.7330	358.5	228.4	103.4	21S	143E
-1182 Jan 28	05:48:53	28661	1020	-39356	34	P	a-	0.7920	1.4148	0.3950	296.3	136.9	-	22N	37E
-1182 Jul 23	07:51:24	28652	1019	-39350	39	P	a-	-0.6892	1.5859	0.6008	299.1	160.6	-	23S	2E
-1182 Dec 18	17:42:44	28644	1018	-39345	6	N	-t	-1.4401	0.2669	-0.8348	158.1	-	-	22N	146W
-1181 Jan 17	11:46:46	28642	1018	-39344	44	N	t-	1.5579	0.0387	-1.0390	60.1	-	-	24N	54W
-1181 Jun 13	16:21:32	28635	1017	-39339	11	N	-a	1.1218	0.7698	-0.1710	217.6	-	-	21S	128W
-1181 Jul 12	23:12:48	28633	1017	-39338	49	N	a-	-1.3767	0.3055	-0.6420	143.9	-	-	25S	130E
-1181 Dec 07	16:47:28	28626	1016	-39333	16	P	-t	-0.7678	1.4974	0.4017	327.4	146.5	-	21N	134W
-1180 Jun 02	08:37:48	28616	1015	-39327	21	T	-a	0.4021	2.1041	1.1359	317.9	199.5	54.2	20S	13W
-1180 Nov 25	20:28:40	28607	1013	-39321	26	T-	pp	-0.0530	2.7838	1.7379	351.1	223.5	101.2	19N	170E
-1179 May 22	19:44:36	28598	1012	-39315	31	T	t-	-0.3809	2.1698	1.1484	342.2	210.3	58.9	18S	179W
-1179 Nov 15	07:25:45	28588	1011	-39309	36	P	a-	0.6289	1.7001	0.7081	300.1	168.0	-	17N	5E
-1178 May 11	23:40:08	28579	1010	-39303	41	N	t-	-1.1823	0.7207	-0.3429	246.1	-	-	16S	122E
-1178 Oct 06	12:08:24	28571	1009	-39298	8	N	-a	-1.4002	0.2765	-0.6988	138.8	-	-	0S	64W
-1178 Nov 04	22:39:12	28570	1009	-39297	46	N	a-	1.2655	0.5215	-0.4498	184.5	-	-	14N	136E
-1177 Apr 01	10:21:27	28562	1008	-39292	13	P	-t	0.8906	1.2479	0.2003	298.8	104.9	-	1N	34W
-1177 Sep 26	01:18:03	28553	1007	-39286	18	P	-a	-0.7623	1.4684	0.4503	298.5	144.2	-	4S	99E
-1176 Mar 20	18:20:47	28544	1005	-39280	23	T+	pp	0.0975	2.6769	1.6812	337.6	219.3	99.6	4N	153W
-1176 Sep 14	07:54:41	28534	1004	-39274	28	T-	pp	-0.0588	2.7858	1.7151	366.4	230.5	103.4	8S	0E
-1175 Mar 10	08:40:21	28525	1003	-39268	33	P	a-	-0.6335	1.6737	0.7171	292.5	167.0	-	8N	8W
-1175 Sep 03	08:22:43	28516	1002	-39262	38	P	t-	0.6602	1.6928	0.6012	343.3	175.3	-	11S	7W
-1174 Jan 29	15:59:28	28508	1001	-39257	5	N	-a	1.2842	0.4930	-0.4897	184.4	-	-	22N	116W
-1174 Feb 28	01:21:22	28507	1001	-39256	43	N	a-	-1.3301	0.3961	-0.5616	163.2	-	-	11N	102E
-1174 Jul 24	19:39:34	28499	1000	-39251	10	N	-t	-1.4505	0.2093	-0.8158	131.7	-	-	24S	176W
-1174 Aug 23	09:15:24	28498	1000	-39250	48	N	t-	1.3492	0.4134	-0.6479	188.1	-	-	15S	20W
-1173 Jan 19	03:11:05	28490	999	-39245	15	P	-a	0.6248	1.7314	0.6920	322.4	175.5	-	23N	75E
-1173 Jul 14	07:07:39	28481	998	-39239	20	P	-a	-0.6467	1.6558	0.6865	297.8	167.1	-	24S	11E

-1172	Jan 08	06:57:53	28471	996	-39233	25	T-	pp	-0.0777	2.7614	1.6702	373.8	232.9	103.1	24N	17E
-1172	Jul 02	23:28:50	28462	995	-39227	30	T+	pp	0.0979	2.6496	1.7065	316.6	210.5	97.3	24S	125E
-1172	Dec 27	06:10:06	28453	994	-39221	35	P	t-	-0.7649	1.5045	0.4052	330.3	147.9	-	23N	27E
-1171	Jun 22	16:10:09	28444	993	-39215	40	P	a-	0.8444	1.2888	0.3281	272.6	121.5	-	22S	126W
-1171	Nov 16	17:32:02	28436	992	-39210	7	N	-a	1.4601	0.1934	-0.8352	124.0	-	-	18N	147W
-1171	Dec 16	08:23:36	28434	992	-39209	45	N	a-	-1.4082	0.3036	-0.7546	159.6	-	-	22N	8W
-1170	May 13	17:09:21	28427	991	-39204	12	N	-t	-1.0314	0.9840	-0.0525	270.9	-	-	16S	141W
-1170	Nov 06	06:07:50	28417	990	-39198	17	P	-a	0.7355	1.4989	0.5179	285.0	146.7	-	14N	24E
-1169	May 02	19:30:12	28408	989	-39192	22	T	pt	-0.2820	2.3753	1.3065	368.6	226.5	83.0	12S	175W
-1169	Oct 26	21:46:28	28399	987	-39186	27	T+	-p	0.0684	2.7191	1.7458	320.5	210.6	97.2	9N	149E
-1168	Apr 20	20:31:34	28390	986	-39180	32	P	t-	0.4806	2.0031	0.9498	349.2	204.1	-	7S	170E
-1168	Oct 15	11:46:26	28380	985	-39174	37	P	a-	-0.6276	1.7112	0.7016	308.2	170.7	-	4N	60W
-1167	Mar 11	17:11:55	28373	984	-39169	4	N	-a	-1.4303	0.2252	-0.7580	129.4	-	-	7N	136W
-1167	Apr 10	03:05:47	28371	984	-39168	42	N	a-	1.2084	0.6426	-0.3610	216.9	-	-	2S	73E
-1167	Sep 05	03:27:19	28364	983	-39163	9	N	-t	1.5485	0.0568	-1.0227	73.3	-	-	10S	66E
-1167	Oct 04	19:52:00	28362	983	-39162	47	N	t-	-1.3828	0.3534	-0.7112	173.4	-	-	1S	179E
-1166	Mar 01	08:32:39	28354	982	-39157	14	P	-a	-0.6836	1.5804	0.6265	285.8	157.5	-	11N	6W
-1166	Aug 25	03:19:33	28345	981	-39151	19	P	-t	0.8591	1.3249	0.2391	315.7	116.7	-	14S	69E
-1165	Feb 19	00:57:44	28336	980	-39145	24	T+	pp	0.0189	2.8073	1.8391	323.6	213.3	99.4	15N	108E
-1165	Aug 14	05:44:49	28327	978	-39139	29	T+	pp	0.1087	2.6804	1.6369	356.8	226.7	100.9	18S	33E
-1164	Feb 08	13:47:40	28317	977	-39133	34	P	a-	0.7658	1.4628	0.4429	300.6	144.3	-	19N	84W
-1164	Aug 02	15:26:55	28308	976	-39127	39	P	a-	-0.6320	1.6908	0.7059	303.9	170.6	-	21S	113W
-1164	Dec 29	01:37:20	28301	975	-39122	6	N	-t	-1.4517	0.2452	-0.8555	151.9	-	-	23N	95E
-1163	Jan 27	19:29:31	28299	975	-39121	44	N	t-	1.5368	0.0769	-0.9999	84.6	-	-	22N	170W
-1163	Jun 23	23:49:12	28291	974	-39116	11	N	-a	1.1923	0.6413	-0.3013	201.4	-	-	22S	119E
-1163	Jul 23	06:54:07	28290	974	-39115	49	N	a-	-1.3173	0.4152	-0.5337	166.0	-	-	24S	14E
-1163	Dec 18	00:51:37	28282	973	-39110	16	P	-t	-0.7721	1.4880	0.3956	325.9	145.2	-	22N	105E
-1162	Jun 13	15:49:00	28273	972	-39104	21	P	-a	0.4802	1.9627	0.9907	314.3	191.9	-	22S	122W
-1162	Dec 07	04:57:51	28264	971	-39098	26	T-	pp	-0.0534	2.7813	1.7392	349.7	222.9	101.0	21N	42E
-1161	Jun 03	02:28:14	28254	969	-39092	31	T	pp	-0.2992	2.3217	1.2965	347.9	217.6	79.4	21S	78E
-1161	Nov 26	16:14:25	28245	968	-39086	36	P	a-	0.6277	1.7012	0.7113	299.3	167.9	-	20N	128W
-1160	May 22	06:00:21	28236	967	-39080	41	N	t-	-1.0969	0.8780	-0.1866	267.8	-	-	19S	25E
-1160	Oct 16	20:48:07	28228	966	-39075	8	N	-a	-1.4113	0.2579	-0.7210	134.6	-	-	4N	164E
-1160	Nov 15	07:32:55	28227	966	-39074	46	N	a-	1.2652	0.5224	-0.4497	184.8	-	-	17N	1E
-1159	Apr 11	17:09:54	28219	965	-39069	13	P	-t	0.9603	1.1173	0.0750	285.5	65.2	-	3S	139W
-1159	Oct 06	09:33:35	28210	964	-39063	18	P	-a	-0.7805	1.4379	0.4140	297.7	139.4	-	0N	27W
-1158	Apr 01	01:43:28	28201	963	-39057	23	T+	pp	0.1591	2.5609	1.5711	334.8	217.1	95.8	0N	94E
-1158	Sep 25	15:38:17	28192	962	-39051	28	T-	pp	-0.0847	2.7410	1.6646	367.6	230.5	102.3	4S	118W
-1157	Mar 21	16:26:52	28182	960	-39045	33	P	a-	-0.5784	1.7728	0.8202	296.5	175.3	-	4N	127W
-1157	Sep 14	15:45:52	28173	959	-39039	38	P	t-	0.6246	1.7598	0.6649	347.4	182.4	-	7S	119W

-1156 Feb 10	00:12:02	28166	958	-39034	5	N	-a	1.3160	0.4343	-0.5479	174.4	-	-	19N	120E
-1156 Mar 10	09:17:08	28164	958	-39033	43	N	a-	-1.2862	0.4759	-0.4804	177.7	-	-	7N	19W
-1156 Aug 04	02:57:44	28156	957	-39028	10	N	-t	-1.5010	0.1164	-0.9082	98.7	-	-	22S	74E
-1156 Sep 02	16:43:47	28155	957	-39027	48	N	t-	1.3059	0.4931	-0.5688	203.3	-	-	11S	134W
-1155 Jan 29	11:10:07	28147	956	-39022	15	P	-a	0.6511	1.6832	0.6436	320.8	171.2	-	21N	46W
-1155 Jul 24	14:42:33	28138	955	-39016	20	P	-a	-0.7042	1.5503	0.5811	291.1	155.9	-	23S	103W
-1154 Jan 18	14:41:55	28129	954	-39010	25	T-	pp	-0.0566	2.7995	1.7095	374.4	233.6	104.1	22N	100W
-1154 Jul 14	07:05:39	28120	953	-39004	30	T+	pp	0.0334	2.7689	1.8238	317.3	211.3	99.0	23S	10E
-1153 Jan 07	13:59:26	28110	952	-38998	35	P	t-	-0.7493	1.5313	0.4358	331.4	152.5	-	23N	90W
-1153 Jul 03	23:33:36	28101	950	-38992	40	P	a-	0.7784	1.4122	0.4472	282.3	139.7	-	23S	122E
-1153 Nov 28	02:07:50	28094	950	-38987	7	N	-a	1.4552	0.2008	-0.8246	125.8	-	-	21N	83E
-1153 Dec 27	16:39:03	28092	949	-38986	45	N	a-	-1.3977	0.3203	-0.7330	163.0	-	-	22N	132W
-1152 May 23	23:45:07	28084	948	-38981	12	N	-t	-1.1169	0.8286	-0.2108	253.6	-	-	19S	118E
-1152 Nov 16	14:59:49	28075	947	-38975	17	P	-a	0.7336	1.5020	0.5219	284.7	146.9	-	17N	111W
-1151 May 13	01:48:13	28066	946	-38969	22	T	-t	-0.3703	2.2130	1.1446	364.2	219.3	60.4	15S	88E
-1151 Nov 06	06:37:15	28057	945	-38963	27	T+	-p	0.0698	2.7176	1.7421	321.0	210.7	97.2	13N	15E
-1150 May 02	03:03:44	28048	944	-38957	32	T	t-	0.3969	2.1545	1.1053	353.5	213.2	51.4	11S	70E
-1150 Oct 26	20:20:03	28039	943	-38951	37	P	a-	-0.6252	1.7180	0.7039	309.8	171.4	-	8N	170E
-1149 Mar 23	00:46:19	28031	942	-38946	4	N	-a	-1.4795	0.1320	-0.8455	99.5	-	-	2N	108E
-1149 Apr 21	10:10:48	28029	942	-38945	42	N	a-	1.1340	0.7764	-0.2217	234.1	-	-	6S	36W
-1149 Oct 16	03:56:05	28020	940	-38939	47	N	t-	-1.3751	0.3703	-0.6997	177.9	-	-	4N	56E
-1148 Mar 11	16:28:59	28013	940	-38934	14	P	-a	-0.7300	1.4935	0.5431	280.4	148.5	-	7N	127W
-1148 Sep 04	10:35:04	28003	938	-38928	19	P	-t	0.8999	1.2513	0.1631	309.2	97.4	-	11S	42W
-1147 Mar 01	08:58:36	27994	937	-38922	24	T-	pp	-0.0218	2.8015	1.8342	324.2	213.8	99.6	12N	14W
-1147 Aug 24	13:12:20	27985	936	-38916	29	T+	pp	0.1540	2.5974	1.5538	354.8	224.6	97.4	15S	81W
-1146 Feb 18	21:36:47	27976	935	-38910	34	P	h-	0.7325	1.5240	0.5040	305.7	153.0	-	16N	157E
-1146 Aug 13	23:11:13	27967	934	-38904	39	P	a-	-0.5813	1.7838	0.7989	307.6	178.1	-	19S	130E
-1145 Jan 09	09:24:39	27959	933	-38899	6	N	-t	-1.4686	0.2133	-0.8856	142.1	-	-	22N	22W
-1145 Feb 08	03:01:39	27958	933	-38898	44	N	t-	1.5078	0.1296	-0.9461	109.5	-	-	20N	76E
-1145 Jul 05	07:21:36	27950	932	-38893	11	N	-a	1.2588	0.5206	-0.4246	183.9	-	-	23S	5E
-1145 Aug 03	14:43:30	27949	932	-38892	49	N	a-	-1.2642	0.5136	-0.4373	182.8	-	-	22S	104W
-1145 Dec 29	08:49:54	27941	931	-38887	16	P	-t	-0.7813	1.4690	0.3805	323.6	142.5	-	23N	15W
-1144 Jun 23	23:03:46	27932	930	-38881	21	P	-a	0.5544	1.8288	0.8523	310.1	183.0	-	23S	129E
-1144 Dec 17	13:24:33	27923	928	-38875	26	T-	pp	-0.0563	2.7737	1.7360	348.1	222.4	100.8	23N	85W
-1143 Jun 13	09:11:21	27913	927	-38869	31	T-	pp	-0.2180	2.4728	1.4433	352.7	223.1	92.0	22S	24W
-1143 Dec 07	01:02:37	27904	926	-38863	36	P	a-	0.6258	1.7034	0.7161	298.7	168.1	-	22N	99E
-1142 Jun 02	12:18:34	27895	925	-38857	41	Nx	t-	-1.0100	1.0382	-0.0279	286.8	-	-	21S	71W
-1142 Oct 28	05:32:55	27887	924	-38852	8	N	-a	-1.4186	0.2462	-0.7360	132.0	-	-	8N	31E
-1142 Nov 26	16:27:06	27886	924	-38851	46	N	a-	1.2655	0.5222	-0.4503	184.8	-	-	20N	133W
-1141 Apr 22	23:52:38	27878	923	-38846	13	N	-t	1.0353	0.9772	-0.0601	269.9	-	-	7S	118E

-1141	Oct 17	17:56:08	27869	922	-38840	18	P	-a	-0.7923	1.4190	0.3898	297.7	136.2	-	5N	155W
-1140	Apr 11	09:00:50	27860	921	-38834	23	T+	pp	0.2262	2.4350	1.4507	331.4	213.7	89.3	4S	18W
-1140	Oct 05	23:28:45	27851	920	-38828	28	T-	pp	-0.1044	2.7077	1.6260	368.8	230.4	101.3	1N	122E
-1139	Apr 01	00:07:29	27842	919	-38822	33	P	a-	-0.5179	1.8818	0.9330	300.6	183.2	-	0S	116E
-1139	Sep 24	23:18:09	27833	917	-38816	38	P	t-	0.5962	1.8135	0.7156	350.5	187.5	-	3S	125E
-1138	Feb 20	08:15:21	27825	917	-38811	5	N	-a	1.3548	0.3628	-0.6187	160.9	-	-	16N	3W
-1138	Mar 21	17:03:59	27824	916	-38810	43	N	a-	-1.2356	0.5681	-0.3869	192.7	-	-	3N	138W
-1138	Aug 15	10:25:09	27816	915	-38805	10	Ne	-h	-1.5449	0.0357	-0.9887	54.8	-	-	19S	39W
-1138	Sep 14	00:22:57	27814	915	-38804	48	N	h-	1.2704	0.5585	-0.5039	214.5	-	-	7S	110E
-1137	Feb 09	18:59:36	27807	914	-38799	15	P	-a	0.6843	1.6224	0.5828	318.3	165.1	-	19N	164W
-1137	Aug 04	22:25:29	27798	913	-38793	20	P	-a	-0.7556	1.4562	0.4867	284.6	144.4	-	21S	140E
-1136	Jan 29	22:17:25	27788	912	-38787	25	T-	pp	-0.0289	2.8494	1.7611	374.9	234.3	105.0	21N	146E
-1136	Jul 24	14:48:59	27779	911	-38781	30	T-	pp	-0.0255	2.7847	1.8371	317.6	211.3	99.0	22S	106W
-1135	Jan 17	21:43:30	27770	910	-38775	35	P	t-	-0.7289	1.5666	0.4754	333.0	158.1	-	22N	153E
-1135	Jul 14	06:59:51	27761	909	-38769	40	P	a-	0.7153	1.5303	0.5605	290.9	154.1	-	23S	10E
-1135	Dec 08	10:43:54	27754	908	-38764	7	N	-a	1.4508	0.2069	-0.8148	127.2	-	-	23N	47W
-1134	Jan 07	00:51:12	27752	908	-38763	45	N	a-	-1.3838	0.3431	-0.7047	167.6	-	-	22N	105E
-1134	Jun 04	06:19:01	27744	907	-38758	12	N	-t	-1.2027	0.6729	-0.3700	233.0	-	-	22S	18E
-1134	Jul 03	18:28:09	27743	906	-38757	50	Nb	t-	1.5267	0.0672	-0.9534	75.5	-	-	22S	163W
-1134	Nov 27	23:51:33	27735	906	-38752	17	P	-a	0.7321	1.5039	0.5253	284.4	147.1	-	20N	116E
-1133	May 24	08:05:13	27726	904	-38746	22	P	-t	-0.4592	2.0499	0.9816	358.6	209.6	-	19S	8W
-1133	Nov 17	15:29:08	27717	903	-38740	27	T+	-p	0.0702	2.7176	1.7406	321.5	210.9	97.2	17N	119W
-1132	May 12	09:36:13	27708	902	-38734	32	T	t-	0.3127	2.3072	1.2616	356.6	220.2	76.7	15S	30W
-1132	Nov 06	04:55:20	27699	901	-38728	37	P	a-	-0.6247	1.7209	0.7027	311.1	171.7	-	13N	39E
-1131	Apr 02	08:15:38	27691	900	-38723	4	Ne	-a	-1.5334	0.0304	-0.9418	48.0	-	-	2S	7W
-1131	May 01	17:14:22	27690	900	-38722	42	N	a-	1.0570	0.9151	-0.0782	249.4	-	-	10S	144W
-1131	Oct 26	12:04:22	27681	899	-38716	47	N	t-	-1.3713	0.3794	-0.6951	180.6	-	-	8N	68W
-1130	Mar 23	00:16:06	27673	898	-38711	14	P	-a	-0.7842	1.3926	0.4452	273.7	136.5	-	3N	114E
-1130	Sep 15	18:01:46	27664	897	-38705	19	P	-t	0.9318	1.1939	0.1035	303.8	78.2	-	7S	156W
-1129	Mar 12	16:48:35	27655	896	-38699	24	T-	pp	-0.0710	2.7108	1.7442	324.6	213.8	98.9	8N	133W
-1129	Sep 04	20:51:37	27646	895	-38693	29	T+	pp	0.1905	2.5305	1.4867	352.8	222.5	93.8	11S	163E
-1128	Mar 01	05:14:32	27636	894	-38687	34	P	h-	0.6908	1.6007	0.5806	311.4	162.8	-	12N	41E
-1128	Aug 24	07:05:45	27627	892	-38681	39	P	a-	-0.5383	1.8627	0.8776	310.3	183.6	-	16S	9E
-1127	Jan 19	17:05:06	27620	892	-38676	6	N	-t	-1.4904	0.1721	-0.9245	128.2	-	-	21N	138W
-1127	Feb 18	10:24:04	27618	891	-38675	44	N	t-	1.4716	0.1953	-0.8791	133.9	-	-	17N	36W
-1127	Jul 15	14:57:07	27611	890	-38670	11	N	-a	1.3223	0.4056	-0.5425	164.3	-	-	22S	110W
-1127	Aug 13	22:39:15	27609	890	-38669	49	N	a-	-1.2164	0.6024	-0.3508	196.2	-	-	19S	136E
-1126	Jan 08	16:45:05	27602	889	-38664	16	P	-t	-0.7935	1.4443	0.3604	320.7	138.9	-	23N	134W
-1126	Jul 05	06:19:27	27593	888	-38658	21	P	-a	0.6266	1.6989	0.7175	305.2	172.3	-	23S	19E
-1126	Dec 28	21:48:27	27584	887	-38652	26	T-	pp	-0.0622	2.7602	1.7275	346.5	221.8	100.6	24N	149E

-1125 Jun 24	15:55:19	27574	886	-38646	31	T-	pp	-0.1386	2.6210	1.5867	356.5	226.9	99.8	24S	126W
-1125 Dec 18	09:49:20	27565	885	-38640	36	P	a-	0.6227	1.7074	0.7232	298.1	168.4	-	24N	33W
-1124 Jun 12	18:38:45	27556	884	-38634	41	P	t-	-0.9244	1.1961	0.1282	303.1	86.9	-	23S	167W
-1124 Nov 07	14:19:56	27549	883	-38629	8	N	-a	-1.4237	0.2381	-0.7469	130.2	-	-	12N	102W
-1124 Dec 07	01:20:10	27547	883	-38628	46	N	a-	1.2654	0.5223	-0.4502	184.9	-	-	23N	93E
-1123 May 03	06:35:11	27540	882	-38623	13	N	-t	1.1109	0.8361	-0.1965	252.2	-	-	11S	15E
-1123 Oct 28	02:21:49	27530	881	-38617	18	P	-a	-0.8007	1.4060	0.3719	298.0	133.8	-	9N	77E
-1122 Apr 22	16:14:36	27521	880	-38611	23	T	-p	0.2971	2.3023	1.3231	327.2	209.2	79.1	8S	129W
-1122 Oct 17	07:25:17	27512	879	-38605	28	T-	pp	-0.1183	2.6844	1.5981	369.9	230.4	100.5	5N	1E
-1121 Apr 12	07:42:40	27503	877	-38599	33	T	a-	-0.4528	1.9998	1.0540	304.4	190.3	34.2	5S	1W
-1121 Oct 06	06:58:45	27494	876	-38593	38	P	t-	0.5745	1.8544	0.7542	352.7	191.2	-	1N	8E
-1120 Mar 02	16:08:27	27487	875	-38588	5	N	-a	1.4012	0.2776	-0.7037	142.3	-	-	12N	123W
-1120 Apr 01	00:43:33	27485	875	-38587	43	N	a-	-1.1797	0.6705	-0.2839	207.6	-	-	1S	105E
-1120 Sep 24	08:12:37	27476	874	-38581	48	N	h-	1.2427	0.6094	-0.4532	222.4	-	-	3S	10W
-1119 Feb 20	02:38:08	27468	873	-38576	15	P	-h	0.7256	1.5465	0.5070	314.6	156.3	-	15N	80E
-1119 Aug 15	06:16:46	27459	872	-38570	20	P	-a	-0.8006	1.3739	0.4038	278.5	132.9	-	19S	21E
-1118 Feb 09	05:42:13	27450	871	-38564	25	T+	pp	0.0072	2.8883	1.8021	375.2	234.7	105.4	18N	34E
-1118 Aug 04	22:39:02	27441	870	-38558	30	T-	pp	-0.0789	2.6883	1.7378	317.6	210.7	97.7	20S	135E
-1117 Jan 29	05:17:36	27432	869	-38552	35	P	t-	-0.6998	1.6175	0.5313	335.4	165.4	-	20N	39E
-1117 Jul 25	14:31:48	27423	868	-38546	40	P	a-	0.6575	1.6390	0.6639	298.3	165.4	-	22S	104W
-1117 Dec 19	19:17:58	27415	867	-38541	7	N	-a	1.4490	0.2081	-0.8093	127.0	-	-	25N	175W
-1116 Jan 18	08:56:57	27414	867	-38540	45	N	a-	-1.3637	0.3770	-0.6649	174.4	-	-	21N	17W
-1116 Jun 14	12:52:31	27406	866	-38535	12	N	-t	-1.2874	0.5194	-0.5273	208.6	-	-	24S	81W
-1116 Jul 14	01:27:36	27405	866	-38534	50	N	t-	1.4638	0.1856	-0.8409	124.8	-	-	22S	92E
-1116 Dec 08	08:43:04	27397	865	-38529	17	P	-a	0.7312	1.5045	0.5279	283.9	147.3	-	23N	18W
-1115 Jun 03	14:21:34	27388	864	-38523	22	P	-t	-0.5484	1.8864	0.8177	351.4	197.1	-	21S	104W
-1115 Nov 28	00:22:23	27379	862	-38517	27	T+	-p	0.0689	2.7205	1.7422	322.0	211.1	97.3	20N	107E
-1114 May 23	16:06:47	27370	861	-38511	32	T+	pp	0.2260	2.4646	1.4222	358.8	225.3	91.5	18S	130W
-1114 Nov 17	13:33:27	27361	860	-38505	37	P	a-	-0.6275	1.7176	0.6958	312.1	171.6	-	16N	92W
-1113 May 13	00:16:46	27352	859	-38499	42	P	a-	0.9780	1.0579	0.0690	262.9	59.6	-	14S	108E
-1113 Nov 06	20:15:42	27343	858	-38493	47	N	t-	-1.3707	0.3826	-0.6959	182.0	-	-	12N	168E
-1112 Apr 02	07:58:16	27335	857	-38488	14	P	-a	-0.8426	1.2841	0.3393	265.9	121.0	-	1S	4W
-1112 Sep 26	01:37:31	27326	856	-38482	19	P	-t	0.9566	1.1494	0.0571	299.3	58.3	-	2S	88E
-1111 Mar 23	00:31:45	27317	855	-38476	24	T-	-p	-0.1253	2.6110	1.6448	324.6	213.3	96.7	3N	109E
-1111 Sep 15	04:39:53	27308	854	-38470	29	T+	pp	0.2203	2.4759	1.4321	350.9	220.4	90.1	7S	44E
-1110 Mar 12	12:43:05	27299	853	-38464	34	P	t-	0.6425	1.6894	0.6690	317.6	172.8	-	8N	73W
-1110 Sep 04	15:09:32	27290	852	-38458	39	P	a-	-0.5028	1.9281	0.9426	312.1	187.6	-	12S	113W
-1109 Jan 31	00:35:00	27283	851	-38453	6	N	-t	-1.5198	0.1168	-0.9771	106.1	-	-	19N	109E
-1109 Mar 01	17:34:41	27281	851	-38452	44	N	t-	1.4268	0.2769	-0.7961	158.5	-	-	13N	145W
-1109 Jul 26	22:39:53	27274	850	-38447	11	N	-a	1.3795	0.3025	-0.6491	143.6	-	-	21S	134E

-1109 Aug 25	06:44:22	27272	850	-38446	49	N	a-	-1.1765	0.6770	-0.2789	206.5	-	-	16S	13E
-1108 Jan 20	00:32:26	27264	849	-38441	16	P	-t	-0.8120	1.4079	0.3291	316.9	133.1	-	22N	109E
-1108 Jul 15	13:40:01	27255	848	-38435	21	P	-a	0.6936	1.5786	0.5918	299.9	160.2	-	23S	92W
-1107 Jan 08	06:06:54	27246	847	-38429	26	T-	pp	-0.0732	2.7375	1.7102	344.8	221.1	100.2	23N	24E
-1107 Jul 04	22:42:19	27237	845	-38423	31	T-	pp	-0.0629	2.7625	1.7230	359.3	229.2	103.7	24S	132E
-1107 Dec 28	18:31:44	27228	844	-38417	36	P	a-	0.6157	1.7186	0.7379	297.9	169.4	-	24N	163W
-1106 Jun 24	01:00:18	27219	843	-38411	41	P	t-	-0.8398	1.3524	0.2823	317.2	126.2	-	24S	96E
-1106 Nov 18	23:09:28	27212	842	-38406	8	N	-a	-1.4267	0.2338	-0.7536	129.4	-	-	16N	124E
-1106 Dec 18	10:10:35	27210	842	-38405	46	N	a-	1.2636	0.5254	-0.4465	185.5	-	-	24N	40W
-1105 May 14	13:15:49	27203	841	-38400	13	N	-t	1.1885	0.6917	-0.3368	231.8	-	-	14S	87W
-1105 Jun 13	02:00:00	27201	841	-38399	51	Nb	t-	-1.5697	0.0046	-1.0483	20.7	-	-	24S	81E
-1105 Nov 08	10:51:02	27194	840	-38394	18	P	-a	-0.8054	1.3996	0.3612	298.8	132.5	-	13N	52W
-1104 May 02	23:26:10	27185	839	-38388	23	T	-p	0.3706	2.1653	1.1904	322.2	203.2	63.4	12S	121E
-1104 Oct 27	15:27:37	27176	838	-38382	28	T-	pp	-0.1267	2.6711	1.5808	371.0	230.5	99.9	10N	121W
-1103 Apr 22	15:12:37	27167	837	-38376	33	T	a-	-0.3829	2.1266	1.1835	307.9	196.7	60.7	9S	116W
-1103 Oct 16	14:47:17	27158	836	-38370	38	P	t-	0.5590	1.8839	0.7818	354.1	193.6	-	6N	111W
-1102 Mar 13	23:52:52	27150	835	-38365	5	N	-a	1.4539	0.1807	-0.8004	116.1	-	-	8N	119E
-1102 Apr 12	08:16:04	27149	835	-38364	43	N	a-	-1.1184	0.7827	-0.1714	222.2	-	-	5S	11W
-1102 Oct 05	16:11:50	27140	834	-38358	48	N	h-	1.2215	0.6482	-0.4143	227.8	-	-	2N	132W
-1101 Mar 03	10:05:56	27132	833	-38353	15	P	-h	0.7749	1.4561	0.4167	309.5	144.2	-	12N	34W
-1101 Aug 26	14:17:19	27123	832	-38347	20	P	-a	-0.8388	1.3043	0.3333	273.0	121.7	-	15S	100W
-1100 Feb 20	12:58:19	27114	831	-38341	25	T+	pp	0.0502	2.8081	1.7243	375.2	234.8	105.0	15N	77W
-1100 Aug 15	06:35:35	27105	830	-38335	30	T-	-p	-0.1267	2.6022	1.6484	317.3	209.6	95.4	18S	15E

# 11TH CENTURY BCE

**In the 11th century BCE the total number of lunar eclipses was 240 lunar eclipses: 88 penumbral lunar eclipses, 86 partial lunar eclipses, 66 total lunar eclipses (48 central total lunar eclipses, 18 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG



GREATEST S m m m ° °

ECLIPSE

-1099 Feb 08	12:45:36	27096	829	-38329	35	P	t-	-0.6650	1.6788	0.5977	338.1	173.3	-	17N	74W
-1099 Aug 04	22:09:03	27087	828	-38323	40	P	a-	0.6046	1.7388	0.7581	304.7	174.5	-	20S	141E
-1099 Dec 30	03:48:21	27079	827	-38318	7	N	-a	1.4507	0.2025	-0.8101	124.9	-	-	25N	57E
-1098 Jan 28	16:56:05	27078	826	-38317	45	N	a-	-1.3374	0.4220	-0.6136	182.9	-	-	19N	137W
-1098 Jun 25	19:27:17	27070	826	-38312	12	N	-t	-1.3697	0.3705	-0.6805	179.3	-	-	25S	179E
-1098 Jul 25	08:31:43	27069	825	-38311	50	N	t-	1.4051	0.2963	-0.7362	156.9	-	-	21S	15W
-1098 Dec 19	17:31:28	27061	825	-38306	17	P	-a	0.7334	1.4994	0.5251	283.1	146.8	-	24N	150W
-1097 Jun 14	20:41:14	27052	823	-38300	22	P	-t	-0.6347	1.7284	0.6589	343.2	181.8	-	23S	160E
-1097 Dec 09	09:12:33	27043	822	-38294	27	T+	-p	0.0702	2.7186	1.7396	322.5	211.3	97.4	22N	26W
-1096 Jun 02	22:41:39	27034	821	-38288	32	T+	pp	0.1418	2.6178	1.5781	359.7	228.4	100.0	20S	130E
-1096 Nov 27	22:10:37	27025	820	-38282	37	P	a-	-0.6300	1.7146	0.6899	313.1	171.5	-	19N	138E
-1095 May 23	07:19:15	27016	819	-38276	42	P	a-	0.8977	1.2034	0.2182	274.8	103.4	-	17S	1E
-1095 Nov 17	04:28:46	27007	818	-38270	47	N	t-	-1.3719	0.3820	-0.6997	182.4	-	-	15N	43E
-1094 Apr 13	15:33:21	27000	817	-38265	14	P	-a	-0.9071	1.1647	0.2220	256.5	99.6	-	6S	121W
-1094 Oct 07	09:23:14	26991	816	-38259	19	P	-t	0.9735	1.1190	0.0254	295.9	39.0	-	2N	30W
-1093 Apr 03	08:04:55	26982	815	-38253	24	T-	-p	-0.1873	2.4972	1.5309	324.1	211.8	92.4	1S	7W
-1093 Sep 26	12:39:45	26973	814	-38247	29	T+	-p	0.2414	2.4371	1.3935	349.0	218.6	87.0	3S	78W
-1092 Mar 22	20:01:23	26964	813	-38241	34	P	t-	0.5867	1.7920	0.7711	324.1	183.0	-	4N	175E
-1092 Sep 14	23:22:20	26955	812	-38235	39	P	a-	-0.4741	1.9809	0.9949	313.4	190.4	-	8S	122E
-1091 Feb 10	07:56:49	26947	811	-38230	6	Ne	-t	-1.5551	0.0504	-1.0404	70.0	-	-	16N	2W
-1091 Mar 12	00:36:03	26946	811	-38229	44	N	t-	1.3748	0.3715	-0.7000	182.3	-	-	9N	107E
-1091 Aug 06	06:28:12	26938	810	-38224	11	N	-a	1.4317	0.2088	-0.7469	120.6	-	-	19S	16E
-1091 Sep 04	14:57:06	26937	810	-38223	49	N	a-	-1.1430	0.7399	-0.2188	214.6	-	-	12S	111W
-1090 Jan 30	08:13:06	26929	809	-38218	16	P	-t	-0.8366	1.3597	0.2867	311.9	124.7	-	20N	7W
-1090 Jul 26	21:04:22	26920	808	-38212	21	P	-a	0.7566	1.4661	0.4733	294.3	146.4	-	21S	156E
-1089 Jan 19	14:20:24	26912	807	-38206	26	T-	pp	-0.0892	2.7051	1.6838	342.9	220.3	99.5	22N	99W
-1089 Jul 16	05:33:14	26902	806	-38200	31	T+	pp	0.0090	2.8642	1.8191	361.3	230.2	104.8	23S	28E
-1088 Jan 09	03:09:15	26893	805	-38194	36	P	a-	0.6043	1.7375	0.7607	298.0	171.1	-	24N	67E
-1088 Jul 04	07:27:17	26885	804	-38188	41	P	t-	-0.7594	1.5013	0.4287	328.9	152.2	-	25S	1W
-1088 Nov 29	07:58:53	26877	803	-38183	8	N	-a	-1.4296	0.2296	-0.7597	128.5	-	-	19N	9W
-1088 Dec 28	18:57:26	26876	803	-38182	46	N	a-	1.2593	0.5328	-0.4384	186.8	-	-	25N	171W
-1087 May 24	19:57:25	26868	802	-38177	13	N	-t	1.2659	0.5477	-0.4771	208.3	-	-	17S	171E
-1087 Jun 23	08:32:18	26867	801	-38176	51	N	t-	-1.4860	0.1575	-0.8942	119.3	-	-	25S	18W
-1087 Nov 18	19:20:58	26859	801	-38171	18	P	-a	-0.8088	1.3952	0.3531	299.6	131.5	-	16N	180E
-1086 May 14	06:36:44	26850	800	-38165	23	T	-a	0.4455	2.0259	1.0548	316.5	195.7	35.4	15S	11E
-1086 Nov 07	23:32:09	26841	798	-38159	28	T-	pp	-0.1329	2.6613	1.5678	371.9	230.6	99.5	14N	116E
-1085 May 03	22:39:31	26832	797	-38153	33	T	p-	-0.3103	2.2590	1.3178	311.0	201.9	76.4	12S	130E

-1085 Oct 27	22:41:53	26823	796	-38147	38	P	t-	0.5482	1.9041	0.8010	355.0	195.1	-	10N	129E
-1084 Mar 24	07:28:14	26816	795	-38142	5	Ne	-a	1.5134	0.0718	-0.9096	74.2	-	-	4N	3E
-1084 Apr 22	15:43:14	26814	795	-38141	43	N	a-	-1.0531	0.9028	-0.0517	236.2	-	-	9S	125W
-1084 Oct 16	00:18:13	26805	794	-38135	48	N	a-	1.2054	0.6776	-0.3844	231.6	-	-	6N	105E
-1083 Mar 13	17:23:07	26798	793	-38130	15	P	-t	0.8319	1.3515	0.3120	302.8	127.2	-	8N	145W
-1083 Sep 05	22:26:58	26789	792	-38124	20	P	-a	-0.8701	1.2473	0.2753	268.2	111.3	-	12S	136E
-1082 Mar 02	20:01:45	26780	791	-38118	25	T+	pp	0.1033	2.7096	1.6282	374.7	234.1	103.0	11N	175E
-1082 Aug 26	14:40:39	26771	790	-38112	30	T-	-p	-0.1672	2.5297	1.5722	317.0	208.4	92.6	15S	108W
-1081 Feb 19	20:03:08	26762	789	-38106	35	P	t-	-0.6211	1.7566	0.6810	341.5	182.1	-	14N	175E
-1081 Aug 16	05:53:28	26753	788	-38100	40	P	a-	0.5585	1.8264	0.8397	310.1	181.5	-	17S	24E
-1080 Jan 10	12:13:25	26746	787	-38095	7	N	-a	1.4575	0.1875	-0.8199	119.9	-	-	25N	69W
-1080 Feb 09	00:47:28	26744	787	-38094	45	N	a-	-1.3041	0.4799	-0.5492	193.1	-	-	17N	104E
-1080 Jul 06	02:05:27	26737	786	-38089	12	N	-t	-1.4482	0.2289	-0.8268	143.3	-	-	25S	79E
-1080 Aug 04	15:42:01	26735	786	-38088	50	N	t-	1.3519	0.3972	-0.6417	180.8	-	-	19S	124W
-1080 Dec 30	02:17:13	26728	785	-38083	17	P	-a	0.7381	1.4894	0.5178	282.1	145.8	-	25N	79E
-1079 Jun 25	03:02:10	26719	784	-38077	22	P	-t	-0.7199	1.5727	0.5022	333.5	162.8	-	24S	64E
-1079 Dec 19	18:01:30	26710	783	-38071	27	T+	-p	0.0721	2.7153	1.7360	323.0	211.6	97.4	23N	159W
-1078 Jun 14	05:18:21	26701	782	-38065	32	T+	pp	0.0579	2.7705	1.7331	359.6	229.7	104.1	22S	30E
-1078 Dec 09	06:46:15	26692	781	-38059	37	P	a-	-0.6320	1.7120	0.6849	314.1	171.5	-	21N	9E
-1077 Jun 03	14:23:58	26683	780	-38053	42	P	a-	0.8182	1.3477	0.3656	284.9	130.6	-	20S	107W
-1077 Nov 28	12:42:05	26674	779	-38047	47	N	t-	-1.3736	0.3801	-0.7040	182.5	-	-	18N	81W
-1076 Apr 23	23:05:21	26666	778	-38042	14	P	-a	-0.9740	1.0412	0.1001	245.8	68.0	-	10S	124E
-1076 May 23	05:40:03	26665	778	-38041	52	Nb	a-	1.5116	0.0561	-0.8875	63.2	-	-	17S	24E
-1076 Oct 17	17:15:01	26658	777	-38036	19	P	-t	0.9858	1.0969	0.0024	293.3	12.1	-	7N	150W
-1075 Apr 13	15:33:04	26649	776	-38030	24	T-	-p	-0.2528	2.3773	1.4105	323.1	209.3	85.4	5S	122W
-1075 Oct 06	20:47:41	26640	775	-38024	29	T+	-p	0.2564	2.4092	1.3661	347.4	217.0	84.6	2N	157E
-1074 Apr 03	03:10:09	26631	774	-38018	34	P	t-	0.5241	1.9073	0.8854	330.6	192.9	-	0S	65E
-1074 Sep 26	07:44:19	26622	773	-38012	39	T	a-	-0.4527	2.0204	1.0340	314.1	192.2	27.7	3S	6W
-1073 Mar 23	07:27:01	26613	772	-38006	44	N	t-	1.3149	0.4807	-0.5895	205.6	-	-	5N	2E
-1073 Aug 17	14:24:46	26605	771	-38001	11	N	-a	1.4770	0.1277	-0.8323	95.2	-	-	16S	105W
-1073 Sep 15	23:18:25	26604	771	-38000	49	N	a-	-1.1166	0.7897	-0.1717	220.7	-	-	8S	121E
-1072 Feb 10	15:44:54	26596	770	-37995	16	P	-t	-0.8689	1.2976	0.2305	305.7	112.5	-	17N	121W
-1072 Aug 06	04:36:02	26587	769	-37989	21	P	-a	0.8125	1.3667	0.3677	288.9	131.5	-	19S	42E
-1071 Jan 29	22:26:37	26579	768	-37983	26	T-	pp	-0.1117	2.6606	1.6455	340.9	219.3	98.4	20N	138E
-1071 Jul 26	12:28:38	26570	767	-37977	31	T+	pp	0.0761	2.7440	1.6932	362.6	230.0	103.3	22S	76W
-1070 Jan 19	11:40:31	26561	766	-37971	36	P	a-	0.5876	1.7660	0.7934	298.6	173.5	-	23N	61W
-1070 Jul 15	13:59:23	26552	765	-37965	41	P	t-	-0.6832	1.6424	0.5669	338.7	171.2	-	24S	100W
-1070 Dec 10	16:46:19	26544	764	-37960	8	N	-a	-1.4336	0.2228	-0.7678	127.0	-	-	21N	141W
-1069 Jan 09	03:37:38	26543	764	-37959	46	N	a-	1.2504	0.5485	-0.4214	189.4	-	-	25N	59E
-1069 Jun 05	02:41:00	26535	763	-37954	13	N	-t	1.3421	0.4065	-0.6153	181.1	-	-	20S	68E

-1069 Jul 04	15:11:05	26534	763	-37953	51	N	t-	-1.4064	0.3032	-0.7478	162.9	-	-	25S	118W
-1069 Nov 30	03:51:18	26526	762	-37948	18	P	-a	-0.8107	1.3932	0.3482	300.6	131.1	-	19N	51E
-1068 May 24	13:47:31	26518	761	-37942	23	P	-a	0.5210	1.8857	0.9179	309.9	186.6	-	18S	99W
-1068 Nov 18	07:39:01	26509	760	-37936	28	T-	pp	-0.1365	2.6560	1.5600	372.8	230.8	99.2	17N	7W
-1067 May 14	06:04:02	26500	759	-37930	33	T-	p-	-0.2355	2.3955	1.4555	313.5	206.1	87.0	16S	17E
-1067 Nov 07	06:42:00	26491	758	-37924	38	P	t-	0.5415	1.9166	0.8131	355.3	196.0	-	14N	7E
-1066 May 03	23:04:27	26482	757	-37918	43	P	a-	-0.9833	1.0313	0.0758	249.6	60.3	-	13S	122E
-1066 Oct 27	08:32:40	26473	756	-37912	48	N	a-	1.1949	0.6963	-0.3646	233.6	-	-	10N	21W
-1065 Mar 25	00:30:54	26466	755	-37907	15	P	-t	0.8955	1.2350	0.1952	294.2	102.6	-	3N	105E
-1065 Sep 17	06:45:07	26457	754	-37901	20	P	-a	-0.8950	1.2023	0.2291	264.2	102.1	-	7S	9E
-1064 Mar 13	02:57:27	26448	753	-37895	25	T+	pp	0.1622	2.6001	1.5211	373.5	232.5	98.8	7N	69E
-1064 Sep 05	22:53:22	26439	752	-37889	30	T-	-p	-0.2011	2.4693	1.5082	316.8	207.2	89.6	11S	127E
-1063 Mar 02	03:14:05	26430	751	-37883	35	P	t-	-0.5710	1.8456	0.7756	344.9	190.8	-	11N	66E
-1063 Aug 26	13:44:04	26421	749	-37877	40	P	a-	0.5182	1.9035	0.9107	314.8	187.2	-	14S	96W
-1062 Jan 20	20:33:08	26414	749	-37872	7	N	-a	1.4693	0.1630	-0.8388	111.6	-	-	24N	166E
-1062 Feb 19	08:32:05	26412	748	-37871	45	N	a-	-1.2642	0.5497	-0.4727	204.3	-	-	14N	14W
-1062 Jul 17	08:48:24	26405	748	-37866	12	Ne	-t	-1.5218	0.0964	-0.9642	94.4	-	-	25S	22W
-1062 Aug 15	22:59:21	26403	747	-37865	50	N	t-	1.3046	0.4872	-0.5583	199.5	-	-	16S	125E
-1061 Jan 10	10:55:58	26396	747	-37860	17	P	-a	0.7491	1.4677	0.4992	280.3	143.5	-	24N	51W
-1061 Jul 06	09:30:22	26387	746	-37854	22	P	-t	-0.7991	1.4280	0.3560	323.2	140.1	-	25S	34W
-1061 Dec 31	02:44:44	26378	745	-37848	27	T+	-p	0.0788	2.7028	1.7236	323.5	211.9	97.4	24N	70E
-1060 Jun 24	12:01:23	26369	743	-37842	32	T-	pp	-0.0217	2.8361	1.8005	358.4	229.3	104.6	24S	72W
-1060 Dec 19	15:17:25	26360	742	-37836	37	P	a-	-0.6310	1.7148	0.6860	315.3	172.1	-	23N	119W
-1059 Jun 13	21:31:59	26351	741	-37830	42	P	a-	0.7400	1.4899	0.5103	293.5	150.4	-	22S	145E
-1059 Dec 08	20:52:49	26343	740	-37824	47	N	t-	-1.3739	0.3804	-0.7053	183.1	-	-	21N	156E
-1058 May 05	06:31:34	26335	740	-37819	14	N	-a	-1.0455	0.9095	-0.0308	233.0	-	-	14S	10E
-1058 Jun 03	13:01:53	26334	739	-37818	52	N	a-	1.4376	0.1914	-0.7513	115.1	-	-	19S	88W
-1058 Oct 29	01:15:15	26326	739	-37813	19	Nx	-t	0.9916	1.0862	-0.0084	291.8	-	-	11N	88E
-1057 Apr 24	22:53:34	26317	738	-37807	24	T	-a	-0.3241	2.2472	1.2792	321.2	205.4	74.0	9S	126E
-1057 Oct 18	05:04:19	26308	737	-37801	29	T+	-p	0.2652	2.3926	1.3504	345.9	215.9	83.0	6N	31E
-1056 Apr 13	10:10:28	26300	735	-37795	34	T	t-	0.4554	2.0340	1.0109	337.0	202.1	16.6	5S	42W
-1056 Oct 06	16:14:46	26291	734	-37789	39	T	a-	-0.4377	2.0481	1.0615	314.3	193.3	36.8	1N	136W
-1055 Apr 02	14:08:56	26282	733	-37783	44	N	t-	1.2478	0.6032	-0.4658	227.9	-	-	0N	101W
-1055 Aug 27	22:27:38	26274	733	-37778	11	N	-a	1.5170	0.0566	-0.9079	64.0	-	-	12S	133E
-1055 Sep 26	07:47:11	26273	732	-37777	49	N	a-	-1.0965	0.8280	-0.1363	225.2	-	-	4S	8W
-1054 Feb 20	23:09:51	26266	732	-37772	16	P	-t	-0.9073	1.2240	0.1631	298.0	95.3	-	13N	126E
-1054 Aug 17	12:13:19	26257	731	-37766	21	P	-a	0.8626	1.2779	0.2725	283.5	115.2	-	16S	73W
-1053 Feb 10	06:25:50	26248	730	-37760	26	T-	pp	-0.1409	2.6039	1.5951	338.6	218.0	96.6	17N	18E
-1053 Aug 06	19:30:43	26239	729	-37754	31	T+	pp	0.1367	2.6359	1.5790	363.3	229.0	99.9	20S	177E
-1052 Jan 30	20:05:57	26230	727	-37748	36	P	a-	0.5661	1.8034	0.8350	299.5	176.6	-	21N	172E

-1052	Jul 25	20:38:02	26221	726	-37742	41	P	t-	-0.6122	1.7742	0.6958	346.7	185.7	-	23S	160E
-1052	Dec 21	01:30:25	26214	726	-37737	8	N	-a	-1.4400	0.2116	-0.7800	124.2	-	-	22N	87E
-1051	Jan 19	12:12:08	26212	725	-37736	46	N	a-	1.2374	0.5716	-0.3969	193.1	-	-	24N	70W
-1051	Jun 15	09:28:52	26205	725	-37731	13	N	-t	1.4152	0.2710	-0.7481	149.1	-	-	21S	35W
-1051	Jul 14	21:57:04	26204	724	-37730	51	N	t-	-1.3315	0.4404	-0.6101	193.4	-	-	25S	140E
-1051	Dec 10	12:18:22	26196	724	-37725	18	P	-a	-0.8149	1.3867	0.3394	301.2	130.0	-	21N	76W
-1050	Jun 04	20:59:50	26187	723	-37719	23	P	-a	0.5961	1.7468	0.7815	302.6	175.8	-	20S	152E
-1050	Nov 29	15:45:00	26178	722	-37713	28	T-	pp	-0.1404	2.6496	1.5520	373.5	231.0	99.0	20N	129W
-1049	May 25	13:28:31	26169	721	-37707	33	T-	p-	-0.1605	2.5329	1.5934	315.3	209.1	93.9	19S	95W
-1049	Nov 18	14:43:34	26161	720	-37701	38	P	t-	0.5357	1.9270	0.8240	355.4	196.7	-	18N	115W
-1048	May 14	06:23:19	26152	719	-37695	43	P	a-	-0.9121	1.1628	0.2056	262.0	97.8	-	17S	11E
-1048	Nov 06	16:52:02	26143	718	-37689	48	N	a-	1.1877	0.7085	-0.3506	234.6	-	-	15N	147W
-1047	Apr 04	07:28:21	26135	717	-37684	15	P	-t	0.9664	1.1051	0.0647	283.2	60.4	-	1S	1W
-1047	Sep 27	15:12:00	26127	716	-37678	20	P	-a	-0.9133	1.1693	0.1951	261.1	94.5	-	3S	120W
-1046	Mar 24	09:42:11	26118	715	-37672	25	T+	pp	0.2299	2.4747	1.3982	371.5	229.5	91.1	3N	34W
-1046	Sep 17	07:14:46	26109	714	-37666	30	T-	-p	-0.2278	2.4223	1.4574	316.6	206.0	86.7	7S	0W
-1045	Mar 13	10:15:13	26100	713	-37660	35	P	t-	-0.5120	1.9510	0.8866	348.5	199.6	-	7N	42W
-1045	Sep 06	21:43:18	26091	712	-37654	40	P	a-	0.4857	1.9663	0.9674	318.8	191.5	-	10S	143E
-1044	Feb 01	04:46:30	26084	711	-37649	7	N	-a	1.4872	0.1272	-0.8688	98.5	-	-	21N	42E
-1044	Mar 01	16:09:38	26082	711	-37648	45	N	a-	-1.2174	0.6322	-0.3835	216.3	-	-	10N	130W
-1044	Aug 26	06:23:04	26074	710	-37642	50	N	t-	1.2630	0.5669	-0.4851	214.5	-	-	13S	13E
-1043	Jan 20	19:30:02	26066	709	-37637	17	P	-a	0.7643	1.4380	0.4728	278.0	140.1	-	23N	180W
-1043	Jul 16	16:03:39	26057	708	-37631	22	P	-t	-0.8744	1.2907	0.2170	311.9	111.6	-	24S	132W
-1042	Jan 10	11:22:52	26049	707	-37625	27	T+	-p	0.0893	2.6834	1.7047	323.9	212.1	97.2	23N	59W
-1042	Jul 05	18:49:38	26040	706	-37619	32	T-	pp	-0.0979	2.6956	1.6613	356.5	227.6	102.0	24S	175W
-1042	Dec 30	23:43:57	26031	705	-37613	37	P	a-	-0.6269	1.7230	0.6929	316.8	173.3	-	23N	114E
-1041	Jun 25	04:45:01	26022	704	-37607	42	P	a-	0.6652	1.6262	0.6486	300.4	165.4	-	23S	36E
-1041	Dec 20	04:59:38	26013	703	-37601	47	N	t-	-1.3715	0.3852	-0.7014	184.6	-	-	22N	34E
-1040	May 15	13:57:27	26006	702	-37596	14	N	-a	-1.1173	0.7777	-0.1624	218.6	-	-	17S	103W
-1040	Jun 13	20:27:16	26004	702	-37595	52	N	a-	1.3660	0.3226	-0.6199	147.5	-	-	21S	160E
-1040	Nov 08	09:19:26	25997	701	-37590	19	Nx	-t	0.9948	1.0800	-0.0139	290.6	-	-	15N	34W
-1039	May 05	06:09:27	25988	700	-37584	24	T	-a	-0.3984	2.1118	1.1420	318.6	200.0	55.3	13S	14E
-1039	Oct 28	13:26:54	25979	699	-37578	29	T+	-p	0.2699	2.3833	1.3425	344.5	215.0	82.1	10N	96W
-1038	Apr 24	17:03:49	25970	698	-37572	34	T	t-	0.3816	2.1703	1.1454	343.0	210.4	58.4	9S	148W
-1038	Oct 18	00:51:51	25962	697	-37566	39	T	a-	-0.4278	2.0662	1.0797	314.2	193.9	41.6	6N	93E
-1037	Apr 13	20:42:58	25953	696	-37560	44	N	t-	1.1744	0.7375	-0.3306	248.9	-	-	4S	158E
-1037	Oct 07	16:23:29	25944	695	-37554	49	N	a-	-1.0826	0.8548	-0.1121	228.4	-	-	1N	139W
-1036	Mar 03	06:26:40	25937	694	-37549	16	P	-t	-0.9527	1.1375	0.0829	288.8	68.5	-	10N	15E
-1036	Aug 27	19:57:47	25928	693	-37543	21	P	-a	0.9059	1.2019	0.1899	278.6	97.6	-	13S	169E
-1035	Feb 20	14:17:40	25919	692	-37537	26	T-	pp	-0.1770	2.5344	1.5321	336.1	216.3	93.8	14N	102W

-1035 Aug 17	02:40:04	25910	691	-37531	31	T+	pp	0.1903	2.5405	1.4776	363.7	227.3	95.0	17S	69E
-1034 Feb 10	04:22:12	25901	690	-37525	36	P	a-	0.5365	1.8554	0.8914	301.1	180.4	-	18N	47E
-1034 Aug 06	03:25:20	25893	689	-37519	41	P	t-	-0.5480	1.8936	0.8120	353.1	196.6	-	20S	57E
-1033 Jan 01	10:09:28	25885	688	-37514	8	N	-a	-1.4502	0.1931	-0.7989	119.1	-	-	22N	43W
-1033 Jan 30	20:38:10	25884	688	-37513	46	N	a-	1.2181	0.6063	-0.3607	198.4	-	-	21N	163E
-1033 Jun 26	16:22:10	25876	687	-37508	13	N	-t	1.4848	0.1423	-0.8747	108.9	-	-	22S	139W
-1033 Jul 26	04:52:10	25875	687	-37507	51	N	t-	-1.2625	0.5669	-0.4835	216.1	-	-	23S	35E
-1033 Dec 21	20:41:39	25868	686	-37502	18	P	-a	-0.8213	1.3757	0.3266	301.4	128.1	-	23N	158E
-1032 Jun 15	04:15:38	25859	685	-37496	23	P	-a	0.6688	1.6123	0.6489	294.7	163.3	-	22S	42E
-1032 Dec 09	23:50:27	25850	684	-37490	28	T-	pp	-0.1443	2.6428	1.5444	374.1	231.2	98.8	22N	109E
-1031 Jun 04	20:51:51	25841	683	-37484	33	T-	pp	-0.0844	2.6726	1.7330	316.5	210.9	98.0	21S	152E
-1031 Nov 28	22:48:11	25832	682	-37478	38	P	t-	0.5319	1.9333	0.8315	355.1	197.1	-	20N	124E
-1030 May 25	13:39:12	25824	681	-37472	43	P	a-	-0.8391	1.2979	0.3384	273.4	123.4	-	20S	100W
-1030 Nov 18	01:15:27	25815	680	-37466	48	N	a-	1.1830	0.7159	-0.3407	234.8	-	-	18N	86E
-1029 Apr 15	14:18:25	25807	679	-37461	15	N	-t	1.0423	0.9664	-0.0749	269.6	-	-	5S	106W
-1029 Oct 08	23:46:34	25799	679	-37455	20	P	-a	-0.9258	1.1468	0.1717	258.9	88.8	-	1N	110E
-1028 Apr 03	16:21:08	25790	678	-37449	25	T	pt	0.3023	2.3409	1.2666	368.4	224.9	78.5	1S	136W
-1028 Sep 27	15:42:23	25781	677	-37443	30	T-	-p	-0.2491	2.3850	1.4164	316.6	205.0	84.0	2S	129W
-1027 Mar 23	17:11:22	25772	676	-37437	35	T	t-	-0.4480	2.0656	1.0068	351.8	207.6	13.4	3N	148W
-1027 Sep 17	05:49:21	25763	675	-37431	40	T	p-	0.4593	2.0177	1.0127	322.1	194.8	17.3	6S	19E
-1026 Feb 11	12:51:36	25756	674	-37426	7	N	-a	1.5124	0.0780	-0.9120	77.1	-	-	19N	80W
-1026 Mar 12	23:39:17	25755	674	-37425	45	N	a-	-1.1631	0.7285	-0.2806	228.9	-	-	6N	116E
-1026 Sep 06	13:55:27	25746	673	-37419	50	N	t-	1.2288	0.6329	-0.4256	226.2	-	-	9S	102W
-1025 Feb 01	03:55:36	25739	672	-37414	17	P	-a	0.7870	1.3947	0.4329	274.8	134.8	-	21N	53E
-1025 Jul 27	22:46:24	25730	671	-37408	22	P	-t	-0.9420	1.1677	0.0922	300.6	74.0	-	23S	126E
-1024 Jan 21	19:52:26	25721	670	-37402	27	T+	-p	0.1067	2.6512	1.6731	324.2	212.2	96.6	22N	173E
-1024 Jul 16	01:47:00	25712	669	-37396	32	T-	pp	-0.1678	2.5670	1.5336	353.9	224.8	96.9	23S	80E
-1023 Jan 10	08:03:03	25703	668	-37390	37	P	a-	-0.6174	1.7408	0.7099	318.8	175.4	-	23N	11W
-1023 Jul 05	12:02:41	25695	667	-37384	42	P	a-	0.5931	1.7579	0.7815	306.2	177.0	-	23S	75W
-1023 Dec 30	13:01:05	25686	666	-37378	47	N	t-	-1.3652	0.3968	-0.6900	187.5	-	-	23N	87W
-1022 May 26	21:20:26	25679	665	-37373	14	N	-a	-1.1915	0.6418	-0.2988	201.5	-	-	20S	144E
-1022 Jun 25	03:54:42	25677	665	-37372	52	N	a-	1.2956	0.4521	-0.4909	172.3	-	-	22S	47E
-1022 Nov 19	17:27:26	25670	664	-37367	19	Nx	-t	0.9955	1.0781	-0.0143	289.7	-	-	18N	158W
-1021 May 16	13:20:48	25661	663	-37361	24	P	-a	-0.4758	1.9710	0.9988	315.0	192.7	-	17S	95W
-1021 Nov 08	21:55:49	25652	662	-37355	29	T+	-p	0.2705	2.3812	1.3423	343.2	214.4	81.9	14N	135E
-1020 May 04	23:50:57	25643	661	-37349	34	T	pp	0.3036	2.3145	1.2875	348.4	217.5	78.5	13S	108E
-1020 Oct 28	09:34:49	25635	660	-37343	39	T	a-	-0.4223	2.0761	1.0899	313.9	194.0	43.9	10N	39W
-1019 Apr 24	03:10:47	25626	659	-37337	44	N	t-	1.0959	0.8812	-0.1862	268.5	-	-	8S	59E
-1019 Oct 18	01:06:04	25617	658	-37331	49	N	a-	-1.0744	0.8712	-0.0982	230.4	-	-	5N	88E
-1018 Mar 14	13:35:56	25610	657	-37326	16	Nx	-t	-1.0047	1.0388	-0.0095	277.7	-	-	6N	94W

-1018 Sep 08	03:49:33	25601	656	-37320	21	P	-a	0.9421	1.1387	0.1202	274.4	78.6	-	9S	49E
-1017 Mar 03	22:02:59	25592	655	-37314	26	T-	-p	-0.2191	2.4538	1.4579	333.2	214.0	89.6	10N	140E
-1017 Aug 28	09:56:42	25584	654	-37308	31	T+	-p	0.2372	2.4576	1.3886	363.8	225.3	89.0	14S	42W
-1016 Feb 21	12:32:14	25575	653	-37302	36	P	a-	0.5016	1.9173	0.9575	302.9	184.7	-	15N	77W
-1016 Aug 16	10:21:39	25566	653	-37296	41	P	t-	-0.4910	1.9998	0.9151	358.1	204.8	-	18S	48W
-1015 Jan 11	18:42:33	25559	652	-37291	8	N	-a	-1.4648	0.1665	-0.8257	111.2	-	-	22N	171W
-1015 Feb 10	04:56:45	25557	652	-37290	46	N	a-	1.1933	0.6511	-0.3144	204.9	-	-	19N	37E
-1015 Jul 06	23:21:28	25550	651	-37285	13	Ne	-t	1.5501	0.0216	-0.9938	42.7	-	-	22S	115E
-1015 Aug 05	11:56:03	25549	651	-37284	51	N	t-	-1.1995	0.6826	-0.3680	233.8	-	-	21S	72W
-1014 Jan 01	04:58:56	25541	650	-37279	18	P	-a	-0.8318	1.3570	0.3068	301.0	124.9	-	23N	33E
-1014 Jun 26	11:36:08	25533	649	-37273	23	P	-a	0.7382	1.4844	0.5223	286.3	149.1	-	23S	69W
-1014 Dec 21	07:50:11	25524	648	-37267	28	T-	pp	-0.1523	2.6282	1.5298	374.4	231.3	98.2	23N	11W
-1013 Jun 16	04:18:34	25515	647	-37261	33	T-	pp	-0.0113	2.8071	1.8667	317.0	211.6	99.5	23S	40E
-1013 Dec 10	06:51:15	25506	646	-37255	38	P	t-	0.5271	1.9411	0.8415	354.8	197.7	-	23N	2E
-1012 Jun 04	20:54:36	25498	645	-37249	43	P	a-	-0.7663	1.4330	0.4705	283.8	143.0	-	22S	150E
-1012 Nov 28	09:40:10	25489	644	-37243	48	N	a-	1.1788	0.7221	-0.3314	234.9	-	-	21N	41W
-1011 Apr 25	21:00:55	25482	643	-37238	15	N	-t	1.1230	0.8190	-0.2236	252.9	-	-	9S	151E
-1011 Oct 19	08:28:24	25473	642	-37232	20	P	-a	-0.9329	1.1339	0.1583	257.4	85.3	-	6N	23W
-1010 Apr 14	22:50:20	25464	641	-37226	25	T	-t	0.3823	2.1929	1.1206	364.1	218.0	55.6	5S	124E
-1010 Oct 09	00:18:24	25455	640	-37220	30	T-	-p	-0.2633	2.3608	1.3886	316.8	204.4	82.0	2N	100E
-1009 Apr 03	23:59:53	25447	639	-37214	35	T	t-	-0.3769	2.1934	1.1400	354.8	214.8	58.5	2S	107E
-1009 Sep 28	14:02:37	25438	638	-37208	40	T	p-	0.4397	2.0566	1.0457	325.0	197.2	32.6	2S	106W
-1008 Feb 22	20:50:01	25431	637	-37203	7	Ne	-a	1.5435	0.0179	-0.9663	37.0	-	-	15N	159E
-1008 Mar 23	07:03:21	25429	637	-37202	45	N	a-	-1.1031	0.8353	-0.1675	241.2	-	-	2N	2E
-1008 Sep 16	21:35:25	25420	636	-37196	50	N	t-	1.2012	0.6866	-0.3781	235.4	-	-	5S	141E
-1007 Feb 11	12:14:35	25413	636	-37191	17	P	-a	0.8153	1.3410	0.3826	270.8	127.7	-	18N	73W
-1007 Aug 07	05:36:06	25404	635	-37185	22	Nx	-t	-1.0041	1.0548	-0.0227	289.0	-	-	20S	23E
-1006 Feb 01	04:15:21	25396	634	-37179	27	T+	-p	0.1292	2.6094	1.6322	324.5	212.1	95.7	20N	47E
-1006 Jul 27	08:52:22	25387	633	-37173	32	T-	pp	-0.2320	2.4488	1.4161	350.8	221.1	89.6	22S	27W
-1005 Jan 21	16:14:08	25378	632	-37167	37	P	a-	-0.6020	1.7693	0.7379	321.3	178.6	-	21N	134W
-1005 Jul 16	19:28:16	25369	631	-37161	42	P	a-	0.5265	1.8795	0.9040	310.7	185.8	-	23S	173E
-1004 Jan 10	20:56:11	25361	630	-37155	47	N	t-	-1.3539	0.4173	-0.6691	192.3	-	-	22N	154E
-1004 Jun 06	04:44:39	25353	629	-37150	14	N	-a	-1.2644	0.5086	-0.4332	181.9	-	-	23S	32E
-1004 Jul 05	11:26:47	25352	629	-37149	52	N	a-	1.2286	0.5755	-0.3685	192.0	-	-	23S	67W
-1004 Nov 30	01:36:02	25345	628	-37144	19	Nx	-t	0.9961	1.0758	-0.0145	288.8	-	-	21N	80E
-1003 May 26	20:30:31	25336	627	-37138	24	P	-a	-0.5538	1.8293	0.8541	310.4	183.3	-	20S	156E
-1003 Nov 19	06:27:00	25327	626	-37132	29	T+	-p	0.2698	2.3812	1.3449	341.9	213.9	81.9	18N	6E
-1002 May 16	06:33:23	25319	625	-37126	34	T+	pp	0.2226	2.4646	1.4348	353.0	223.1	91.6	16S	5E
-1002 Nov 08	18:21:52	25310	624	-37120	39	T	a-	-0.4198	2.0802	1.0950	313.3	193.9	45.0	14N	173W
-1001 May 05	09:34:15	25301	623	-37114	44	Nx	t-	1.0138	1.0318	-0.0354	286.3	-	-	12S	39W

# 1ST MILLENNIUM BCE

# 10TH CENTURY BCE

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															

-0999 Mar 14 05:40:09 25268 622 -37091 26 T- -p -0.2690 2.3591 1.3694 329.9 210.9 83.1 6N 24E



-0999 Sep 07	17:21:59	25259	621	-37085	31	T	-p	0.2763	2.3887	1.3138	363.8	223.1	82.4	10S	155W
-0998 Mar 03	20:33:11	25250	621	-37079	36	T	a-	0.4587	1.9940	1.0384	305.0	189.4	28.9	11N	161E
-0998 Aug 27	17:28:32	25242	621	-37073	41	T	t-	-0.4423	2.0907	1.0029	361.9	210.7	9.0	14S	156W
-0997 Jan 23	03:07:12	25234	621	-37068	8	N	-a	-1.4857	0.1280	-0.8641	98.1	-	-	20N	62E
-0997 Feb 21	13:05:29	25233	621	-37067	46	N	a-	1.1609	0.7098	-0.2542	213.0	-	-	15N	86W
-0997 Aug 16	19:11:22	25224	621	-37061	51	N	t-	-1.1446	0.7835	-0.2673	247.3	-	-	18S	178E
-0996 Jan 12	13:10:04	25217	620	-37056	18	P	-a	-0.8465	1.3305	0.2797	299.9	120.1	-	22N	90W
-0996 Jul 06	19:01:18	25208	620	-37050	23	P	-a	0.8043	1.3627	0.4013	277.5	132.8	-	23S	179E
-0996 Dec 31	15:46:34	25200	620	-37044	28	T-	pp	-0.1627	2.6087	1.5110	374.6	231.2	97.5	24N	130W
-0995 Jun 26	11:46:58	25191	620	-37038	33	T+	pp	0.0603	2.7180	1.7761	317.0	211.2	98.7	24S	73W
-0995 Dec 20	14:52:46	25182	620	-37032	38	P	t-	0.5200	1.9526	0.8560	354.5	198.6	-	24N	118W
-0994 Jun 16	04:09:40	25174	620	-37026	43	P	a-	-0.6935	1.5683	0.6022	293.2	158.9	-	23S	40E
-0994 Dec 09	18:05:52	25165	619	-37020	48	N	a-	1.1744	0.7284	-0.3214	234.8	-	-	23N	168W
-0993 May 07	03:38:52	25158	619	-37015	15	N	-t	1.2064	0.6668	-0.3775	232.4	-	-	12S	49E
-0993 Jun 05	15:41:00	25156	619	-37014	53	Nb	t-	-1.5154	0.0866	-0.9315	85.7	-	-	23S	133W
-0993 Oct 30	17:14:26	25149	619	-37009	20	P	-a	-0.9374	1.1259	0.1500	256.4	83.0	-	10N	156W
-0992 Apr 25	05:16:21	25140	619	-37003	25	P	-t	0.4650	2.0403	0.9697	358.4	208.8	-	9S	25E
-0992 Oct 19	08:59:17	25132	619	-36997	30	T	-p	-0.2734	2.3439	1.3685	317.1	203.9	80.5	7N	32W
-0991 Apr 14	06:43:55	25123	618	-36991	35	T	t-	-0.3009	2.3302	1.2819	357.1	220.8	78.9	6S	4E
-0991 Oct 08	22:22:01	25114	618	-36985	40	T	p-	0.4257	2.0852	1.0686	327.4	199.0	39.7	3N	127E
-0990 Apr 03	14:21:33	25106	618	-36979	45	N	a-	-1.0373	0.9532	-0.0436	253.3	-	-	2S	110W
-0990 Sep 28	05:22:59	25097	618	-36973	50	N	t-	1.1801	0.7283	-0.3421	242.4	-	-	1S	22E
-0989 Feb 22	20:24:06	25090	618	-36968	17	P	-a	0.8520	1.2720	0.3169	265.6	117.3	-	14N	164E
-0989 Aug 18	12:37:33	25081	618	-36962	22	N	-t	-1.0571	0.9584	-0.1211	278.0	-	-	18S	84W
-0988 Feb 12	12:28:59	25072	617	-36956	27	T+	-p	0.1594	2.5537	1.5773	324.5	211.7	93.9	17N	78W
-0988 Aug 06	16:07:25	25064	617	-36950	32	T	-p	-0.2895	2.3431	1.3107	347.4	216.9	80.3	20S	137W
-0987 Feb 01	00:15:55	25055	617	-36944	37	P	a-	-0.5795	1.8105	0.7790	324.4	182.8	-	19N	105E
-0987 Jul 27	03:01:09	25046	617	-36938	42	T	a-	0.4649	1.9925	1.0172	314.1	192.6	19.9	21S	59E
-0986 Jan 21	04:41:39	25038	617	-36932	47	N	t-	-1.3354	0.4508	-0.6346	199.5	-	-	21N	37E
-0986 Jun 17	12:09:05	25030	616	-36927	14	N	-a	-1.3370	0.3765	-0.5673	158.7	-	-	24S	80W
-0986 Jul 16	19:04:00	25029	616	-36926	52	N	a-	1.1655	0.6920	-0.2536	208.1	-	-	22S	178E
-0986 Dec 11	09:45:08	25022	616	-36921	19	Nx	-t	0.9972	1.0723	-0.0149	287.6	-	-	23N	43W
-0985 Jun 07	03:38:43	25013	616	-36915	24	P	-a	-0.6321	1.6874	0.7086	304.8	171.7	-	22S	47E
-0985 Nov 30	15:00:14	25004	616	-36909	29	T+	-p	0.2684	2.3821	1.3490	340.6	213.4	82.1	21N	123W
-0984 May 26	13:13:01	24996	616	-36903	34	T+	pp	0.1400	2.6177	1.5848	356.7	227.2	99.8	19S	96W
-0984 Nov 19	03:12:29	24987	616	-36897	39	T	a-	-0.4198	2.0797	1.0956	312.7	193.6	45.1	17N	54E
-0983 May 15	15:53:02	24978	615	-36891	44	P	t-	0.9276	1.1899	0.1227	302.6	85.1	-	15S	136W
-0983 Nov 08	18:44:15	24970	615	-36885	49	N	a-	-1.0690	0.8831	-0.0902	232.1	-	-	13N	179W
-0982 Apr 05	03:36:17	24963	615	-36880	16	N	-t	-1.1257	0.8109	-0.2254	248.9	-	-	3S	51E
-0982 Sep 29	19:55:48	24954	615	-36874	21	P	-a	0.9937	1.0504	0.0193	268.6	32.2	-	0S	164E

-0981 Mar 25	13:12:16	24945	615	-36868	26	T	-p	-0.3241	2.2551	1.2713	326.0	206.8	73.6	2N	92W
-0981 Sep 19	00:55:30	24937	614	-36862	31	T	-p	0.3082	2.3330	1.2526	363.8	221.1	75.6	5S	89E
-0980 Mar 14	04:28:38	24928	614	-36856	36	T	a-	0.4110	2.0796	1.1277	307.3	194.0	51.4	7N	40E
-0980 Sep 07	00:44:08	24919	614	-36850	41	T	t-	-0.4004	2.1691	1.0784	364.8	215.2	45.2	10S	93E
-0979 Feb 02	11:24:15	24912	614	-36845	8	N	-a	-1.5122	0.0792	-0.9126	77.7	-	-	18N	63W
-0979 Mar 03	21:06:44	24911	614	-36844	46	N	a-	1.1229	0.7788	-0.1839	221.8	-	-	11N	152E
-0979 Aug 27	02:37:07	24902	614	-36838	51	N	h-	-1.0971	0.8707	-0.1804	257.7	-	-	15S	65E
-0978 Jan 22	21:11:08	24895	614	-36833	18	P	-a	-0.8685	1.2901	0.2391	297.5	112.0	-	21N	150E
-0978 Jul 18	02:33:56	24886	613	-36827	23	P	-a	0.8648	1.2516	0.2903	268.7	114.5	-	22S	65E
-0977 Jan 11	23:34:15	24878	613	-36821	28	T-	pp	-0.1796	2.5769	1.4806	374.4	230.8	96.0	23N	113E
-0977 Jul 07	19:20:38	24869	613	-36815	33	T+	-p	0.1275	2.5958	1.6518	316.4	209.9	95.8	24S	173E
-0977 Dec 31	22:48:49	24860	613	-36809	38	P	t-	0.5081	1.9725	0.8796	354.5	200.2	-	24N	123E
-0976 Jun 26	11:27:08	24852	613	-36803	43	P	a-	-0.6235	1.6989	0.7286	301.5	171.7	-	24S	70W
-0976 Dec 20	02:29:23	24843	612	-36797	48	N	a-	1.1675	0.7387	-0.3066	235.3	-	-	25N	66E
-0975 May 17	10:10:21	24836	612	-36792	15	N	-t	1.2937	0.5078	-0.5388	206.6	-	-	16S	51W
-0975 Jun 15	22:27:30	24834	612	-36791	53	N	t-	-1.4419	0.2238	-0.7988	136.7	-	-	24S	124E
-0975 Nov 10	02:05:26	24827	612	-36786	20	P	-a	-0.9381	1.1244	0.1487	256.0	82.6	-	14N	70E
-0974 May 06	11:36:15	24819	612	-36780	25	P	-t	0.5522	1.8797	0.8104	351.2	196.5	-	13S	72W
-0974 Oct 30	17:45:39	24810	612	-36774	30	T	-p	-0.2786	2.3358	1.3575	317.6	203.8	79.6	11N	166W
-0973 Apr 25	13:23:40	24801	612	-36768	35	T-	pp	-0.2206	2.4751	1.4316	358.7	225.3	92.1	10S	98W
-0973 Oct 20	06:47:49	24793	611	-36762	40	T	p-	0.4180	2.1019	1.0802	329.4	200.2	42.9	7N	1W
-0972 Apr 13	21:35:40	24784	611	-36756	45	P	a-	-0.9669	1.0795	0.0883	264.8	67.1	-	6S	139E
-0972 Oct 08	13:16:59	24775	611	-36750	50	N	t-	1.1646	0.7594	-0.3165	247.7	-	-	3N	98W
-0971 Mar 05	04:27:10	24768	611	-36745	17	P	-a	0.8942	1.1931	0.2412	259.3	103.4	-	11N	41E
-0971 Aug 28	19:48:02	24760	611	-36739	22	N	-t	-1.1033	0.8748	-0.2068	267.7	-	-	14S	167E
-0970 Feb 22	20:33:31	24751	611	-36733	27	T+	-p	0.1966	2.4849	1.5093	324.3	210.8	91.0	14N	159E
-0970 Aug 17	23:32:35	24742	610	-36727	32	T	-p	-0.3396	2.2512	1.2189	343.9	212.5	69.4	17S	111E
-0969 Feb 12	08:08:28	24734	610	-36721	37	P	h-	-0.5502	1.8645	0.8328	328.0	187.8	-	16N	14W
-0969 Aug 07	10:42:35	24725	610	-36715	42	T	a-	0.4098	2.0936	1.1183	316.7	197.6	50.6	19S	57W
-0968 Feb 01	12:18:46	24716	610	-36709	47	N	t-	-1.3105	0.4959	-0.5882	208.7	-	-	19N	78W
-0968 Jun 27	19:37:19	24709	610	-36704	14	N	-a	-1.4062	0.2508	-0.6955	131.3	-	-	25S	167E
-0968 Jul 27	02:47:57	24708	610	-36703	52	N	a-	1.1078	0.7989	-0.1488	221.2	-	-	21S	61E
-0968 Dec 21	17:51:25	24701	609	-36698	19	Nx	-t	1.0010	1.0635	-0.0200	285.8	-	-	24N	164W
-0967 Jun 17	10:46:41	24692	609	-36692	24	P	-a	-0.7097	1.5472	0.5641	298.2	157.3	-	24S	61W
-0967 Dec 10	23:32:47	24684	609	-36686	29	T+	-p	0.2684	2.3801	1.3510	339.2	212.9	82.1	23N	109E
-0966 Jun 06	19:51:29	24675	609	-36680	34	T+	pp	0.0571	2.7716	1.7350	359.4	229.7	104.2	21S	163E
-0966 Nov 30	12:02:47	24666	609	-36674	39	T	p-	-0.4190	2.0802	1.0980	312.0	193.5	45.5	20N	80W
-0965 May 26	22:11:26	24658	609	-36668	44	P	t-	0.8407	1.3496	0.2819	316.8	126.1	-	18S	128E
-0965 Nov 20	03:37:19	24649	608	-36662	49	N	a-	-1.0695	0.8827	-0.0918	232.3	-	-	17N	46E
-0964 Apr 15	10:29:09	24642	608	-36657	16	N	-t	-1.1929	0.6847	-0.3461	230.6	-	-	7S	55W

-0964	Oct 10	04:08:50	24633	608	-36651	21	Nx	-a	1.0103	1.0229	-0.0140	267.0	-	-	4N	38E
-0963	Apr 04	20:38:01	24625	608	-36645	26	T	-p	-0.3853	2.1400	1.1617	321.3	201.5	58.8	2S	154E
-0963	Sep 29	08:37:42	24616	608	-36639	31	T	-p	0.3322	2.2917	1.2060	364.0	219.4	69.5	1S	28W
-0962	Mar 25	12:14:34	24608	607	-36633	36	T	p-	0.3551	2.1804	1.2320	309.7	198.6	67.0	2N	79W
-0962	Sep 18	08:11:06	24599	607	-36627	41	T	t-	-0.3675	2.2307	1.1374	366.8	218.3	58.6	6S	21W
-0961	Feb 13	19:31:48	24592	607	-36622	8	Ne	-a	-1.5457	0.0177	-0.9739	37.0	-	-	15N	174E
-0961	Mar 15	04:58:46	24590	607	-36621	46	N	a-	1.0780	0.8607	-0.1010	231.7	-	-	7N	31E
-0961	Sep 07	10:13:22	24582	607	-36615	51	N	h-	-1.0573	0.9440	-0.1074	265.5	-	-	11S	50W
-0960	Feb 03	05:03:55	24575	607	-36610	18	P	-h	-0.8965	1.2388	0.1878	294.1	100.3	-	18N	31E
-0960	Jul 28	10:13:07	24566	607	-36604	23	P	-a	0.9204	1.1498	0.1882	260.0	93.3	-	21S	51W
-0959	Jan 22	07:15:26	24557	606	-36598	28	T-	pp	-0.2018	2.5353	1.4409	373.9	230.0	93.6	21N	3W
-0959	Jul 18	02:57:33	24549	606	-36592	33	T+	-p	0.1918	2.4791	1.5324	315.5	207.9	91.1	23S	58E
-0958	Jan 11	06:41:01	24540	606	-36586	38	P	t-	0.4925	1.9990	0.9104	354.6	202.2	-	24N	5E
-0958	Jul 07	18:47:10	24532	606	-36580	43	P	a-	-0.5563	1.8247	0.8495	308.7	182.2	-	24S	180E
-0958	Dec 31	10:49:33	24523	606	-36574	48	N	a-	1.1571	0.7552	-0.2850	236.5	-	-	25N	59W
-0957	May 28	16:41:05	24516	605	-36569	15	N	-t	1.3802	0.3503	-0.6989	174.8	-	-	18S	150W
-0957	Jun 27	05:16:56	24515	605	-36568	53	N	t-	-1.3711	0.3561	-0.6714	171.1	-	-	25S	21E
-0957	Nov 21	10:58:17	24507	605	-36563	20	P	-a	-0.9376	1.1251	0.1500	255.8	82.8	-	17N	65W
-0956	May 16	17:55:15	24499	605	-36557	25	P	-t	0.6401	1.7178	0.6496	342.4	180.8	-	16S	169W
-0956	Nov 10	02:34:22	24490	605	-36551	30	T	-p	-0.2818	2.3313	1.3505	318.2	203.8	79.1	15N	61E
-0955	May 05	20:02:11	24482	605	-36545	35	T-	pp	-0.1384	2.6238	1.5847	359.3	228.2	100.2	13S	160E
-0955	Oct 30	15:17:17	24473	605	-36539	40	T	p-	0.4136	2.1123	1.0859	331.1	201.0	44.4	11N	130W
-0954	Apr 25	04:45:57	24465	604	-36533	45	P	a-	-0.8920	1.2143	0.2282	275.4	105.5	-	10S	29E
-0954	Oct 19	21:17:16	24456	604	-36527	50	N	t-	1.1545	0.7804	-0.3004	251.5	-	-	8N	140E
-0953	Mar 16	12:21:48	24449	604	-36522	17	P	-a	0.9438	1.1006	0.1515	251.5	83.0	-	6N	80W
-0953	Sep 09	03:09:22	24440	604	-36516	22	N	-t	-1.1411	0.8063	-0.2772	258.5	-	-	10S	55E
-0952	Mar 05	04:28:42	24432	604	-36510	27	T+	-p	0.2414	2.4025	1.4274	323.8	209.3	86.3	10N	39E
-0952	Aug 28	07:08:50	24423	603	-36504	32	T	-p	-0.3816	2.1740	1.1418	340.6	208.1	57.1	14S	5W
-0951	Feb 22	15:49:29	24415	603	-36498	37	P	t-	-0.5121	1.9343	0.9026	332.1	193.8	-	13N	131W
-0951	Aug 17	18:32:55	24406	603	-36492	42	T	a-	0.3613	2.1829	1.2071	318.5	201.3	64.9	16S	176W
-0950	Feb 11	19:45:00	24398	603	-36486	47	N	t-	-1.2771	0.5563	-0.5261	220.1	-	-	16N	170E
-0950	Jul 09	03:08:53	24390	603	-36481	14	N	-a	-1.4724	0.1308	-0.8186	96.1	-	-	25S	54E
-0950	Aug 07	10:39:13	24389	603	-36480	52	N	a-	1.0560	0.8953	-0.0550	231.9	-	-	18S	58W
-0949	Jan 02	01:53:52	24382	603	-36475	19	Nx	-t	1.0087	1.0471	-0.0319	283.1	-	-	25N	75E
-0949	Jun 28	17:56:46	24373	602	-36469	24	P	-a	-0.7847	1.4121	0.4242	290.8	139.8	-	24S	169W
-0949	Dec 22	08:04:52	24365	602	-36463	29	T+	-p	0.2700	2.3750	1.3503	337.7	212.3	81.8	24N	19W
-0948	Jun 17	02:29:01	24356	602	-36457	34	T-	pp	-0.0257	2.8314	1.7906	361.2	230.5	105.0	23S	62E
-0948	Dec 10	20:53:47	24348	602	-36451	39	T	p-	-0.4184	2.0802	1.1002	311.4	193.3	46.0	22N	147E
-0947	Jun 06	04:29:01	24339	602	-36445	44	P	t-	0.7526	1.5117	0.4431	329.3	154.4	-	21S	32E
-0947	Nov 30	12:31:21	24331	601	-36439	49	N	a-	-1.0714	0.8797	-0.0957	232.2	-	-	19N	88W

-0946 Apr 26	17:18:42	24323	601	-36434	16	N	-t	-1.2635	0.5526	-0.4730	208.9	-	-	11S	159W
-0946 May 26	05:47:04	24322	601	-36433	54	N	t-	1.4861	0.1556	-0.8927	118.4	-	-	18S	12E
-0946 Oct 21	12:27:17	24315	601	-36428	21	Nx	-a	1.0216	1.0048	-0.0374	266.3	-	-	8N	88W
-0945 Apr 16	04:00:42	24306	601	-36422	26	T	-a	-0.4498	2.0191	1.0459	316.0	195.0	32.4	7S	41E
-0945 Oct 10	16:25:14	24298	601	-36416	31	T	-p	0.3512	2.2592	1.1688	364.2	218.0	63.8	3N	147W
-0944 Apr 04	19:56:30	24289	601	-36410	36	T	p-	0.2956	2.2880	1.3426	311.9	202.6	78.5	2S	163E
-0944 Sep 28	15:46:29	24281	600	-36404	41	T	p-	-0.3412	2.2801	1.1846	368.1	220.4	66.8	2S	137W
-0943 Mar 25	12:42:18	24272	600	-36398	46	N	a-	1.0266	0.9547	-0.0064	242.1	-	-	3N	87W
-0943 Sep 17	18:00:02	24264	600	-36392	51	Nx	h-	-1.0249	1.0035	-0.0481	271.3	-	-	7S	169W
-0942 Feb 13	12:45:12	24257	600	-36387	18	P	-h	-0.9330	1.1717	0.1209	289.0	81.5	-	15N	86W
-0942 Aug 08	18:01:27	24248	600	-36381	23	P	-a	0.9690	1.0611	0.0987	251.7	68.3	-	18S	169W
-0941 Feb 02	14:45:25	24239	600	-36375	28	T-	pp	-0.2328	2.4772	1.3853	372.9	228.6	89.7	19N	116W
-0941 Jul 29	10:42:22	24231	599	-36369	33	T+	-p	0.2493	2.3752	1.4254	314.2	205.3	84.9	21S	59W
-0940 Jan 22	14:25:50	24222	599	-36363	38	P	t-	0.4703	2.0372	0.9536	355.0	204.9	-	22N	112W
-0940 Jul 18	02:10:46	24214	599	-36357	43	P	a-	-0.4929	1.9437	0.9633	315.1	190.6	-	23S	68E
-0939 Jan 10	19:05:10	24205	599	-36351	48	N	a-	1.1423	0.7796	-0.2551	238.7	-	-	24N	177E
-0939 Jun 07	23:09:14	24198	599	-36346	15	N	-t	1.4673	0.1922	-0.8601	131.7	-	-	20S	112E
-0939 Jul 07	12:07:46	24197	599	-36345	53	N	t-	-1.3022	0.4853	-0.5477	198.2	-	-	25S	82W
-0939 Dec 01	19:52:05	24190	598	-36340	20	P	-a	-0.9369	1.1258	0.1518	255.5	83.2	-	20N	161E
-0938 May 28	00:11:48	24181	598	-36334	25	P	-t	0.7300	1.5527	0.4851	331.8	160.4	-	19S	96E
-0938 Nov 21	11:25:49	24173	598	-36328	30	T	-p	-0.2823	2.3313	1.3485	318.8	204.0	79.0	18N	73W
-0937 May 17	02:39:44	24164	598	-36322	35	T-	pp	-0.0541	2.7765	1.7412	358.9	229.5	104.2	17S	59E
-0937 Nov 10	23:49:31	24156	598	-36316	40	T	p-	0.4123	2.1169	1.0864	332.6	201.6	44.6	15N	100E
-0936 May 05	11:54:53	24147	598	-36310	45	P	a-	-0.8148	1.3535	0.3721	284.9	131.4	-	14S	80W
-0936 Oct 30	05:22:26	24139	597	-36304	50	N	t-	1.1488	0.7930	-0.2920	254.0	-	-	12N	17E
-0935 Mar 26	20:09:06	24132	597	-36299	17	P	-a	0.9994	0.9973	0.0506	242.0	48.7	-	2N	161E
-0935 Apr 25	03:11:53	24130	597	-36298	55	Nb	a-	-1.5055	0.0680	-0.8772	69.5	-	-	11S	51E
-0935 Sep 19	10:40:27	24123	597	-36293	22	N	-t	-1.1715	0.7513	-0.3338	250.5	-	-	6S	60W
-0934 Mar 16	12:15:15	24115	597	-36287	27	T	-p	0.2926	2.3084	1.3336	322.7	206.9	79.1	6N	80W
-0934 Sep 08	14:55:16	24106	597	-36281	32	T	-p	-0.4161	2.1107	1.0785	337.4	204.1	43.2	10S	123W
-0933 Mar 05	23:20:58	24098	596	-36275	37	P	t-	-0.4670	2.0172	0.9854	336.6	200.1	-	9N	114E
-0933 Aug 29	02:32:55	24089	596	-36269	42	T	p-	0.3202	2.2585	1.2822	319.8	203.8	73.6	13S	63E
-0932 Feb 23	03:02:25	24081	596	-36263	47	N	t-	-1.2367	0.6294	-0.4511	232.7	-	-	12N	59E
-0932 Jul 19	10:45:01	24073	596	-36258	14	Ne	-a	-1.5347	0.0184	-0.9347	36.5	-	-	24S	61W
-0932 Aug 17	18:37:22	24072	596	-36257	52	P	a-	1.0099	0.9815	0.0282	240.8	36.4	-	16S	179W
-0931 Jan 12	09:51:18	24065	596	-36252	19	Nx	-t	1.0211	1.0218	-0.0521	279.4	-	-	24N	44W
-0931 Jul 09	01:09:36	24057	596	-36246	24	P	-a	-0.8566	1.2828	0.2895	282.7	118.3	-	24S	82E
-0930 Jan 01	16:31:34	24048	595	-36240	29	T	-p	0.2767	2.3602	1.3404	335.9	211.5	80.8	24N	146W
-0930 Jun 28	09:08:50	24040	595	-36234	34	T-	pp	-0.1059	2.6866	1.6413	362.0	229.9	102.3	24S	38W
-0930 Dec 22	05:41:11	24031	595	-36228	39	T	p-	-0.4143	2.0864	1.1091	310.9	193.5	47.8	23N	15E

-0929 Jun 17	10:49:14	24023	595	-36222	44	P	t-	0.6664	1.6704	0.6005	339.9	175.3	-	22S	64W
-0929 Dec 11	21:22:52	24014	595	-36216	49	N	a-	-1.0715	0.8797	-0.0960	232.5	-	-	21N	139E
-0928 May 07	00:06:34	24007	594	-36211	16	N	-t	-1.3361	0.4171	-0.6038	183.0	-	-	15S	96E
-0928 Jun 05	12:18:06	24006	594	-36210	54	N	t-	1.4001	0.3121	-0.7338	164.8	-	-	20S	87W
-0928 Oct 31	20:50:03	23998	594	-36205	21	N	-a	1.0287	0.9941	-0.0529	266.2	-	-	13N	144E
-0927 Apr 26	11:17:47	23990	594	-36199	26	P	-a	-0.5198	1.8884	0.9197	309.7	186.5	-	11S	70W
-0927 Oct 21	00:20:29	23982	594	-36193	31	T	-p	0.3634	2.2389	1.1444	364.7	217.1	59.6	8N	92E
-0926 Apr 16	03:31:12	23973	594	-36187	36	T+	p-	0.2297	2.4077	1.4648	313.8	206.2	87.4	6S	47E
-0926 Oct 09	23:31:19	23965	594	-36181	41	T	p-	-0.3222	2.3158	1.2186	368.9	221.7	71.7	3N	105E
-0925 Apr 05	20:18:13	23956	593	-36175	46	P	a-	0.9693	1.0597	0.0988	252.8	68.7	-	1S	157E
-0925 Sep 29	01:57:19	23948	593	-36169	51	Nx	a-	-1.0000	1.0491	-0.0024	275.2	-	-	2S	70E
-0924 Feb 24	20:17:43	23941	593	-36164	18	P	-t	-0.9757	1.0932	0.0427	282.3	49.1	-	12N	160E
-0924 Aug 19	01:56:49	23932	593	-36158	23	P	-a	1.0123	0.9822	0.0187	243.8	30.0	-	15S	71E
-0923 Feb 12	22:08:04	23924	593	-36152	28	T-	-p	-0.2695	2.4085	1.3193	371.4	226.6	83.9	16N	132E
-0923 Aug 08	18:32:42	23915	592	-36146	33	T	-p	0.3018	2.2808	1.3273	312.9	202.3	77.1	19S	178W
-0922 Feb 01	22:03:27	23907	592	-36140	38	T	t-	0.4418	2.0868	1.0086	355.7	208.2	15.1	20N	133E
-0922 Jul 29	09:39:51	23898	592	-36134	43	T	a-	-0.4348	2.0531	1.0670	320.5	197.4	39.1	22S	45W
-0921 Jan 22	03:15:29	23890	592	-36128	48	N	a-	1.1227	0.8125	-0.2162	241.8	-	-	23N	55E
-0921 Jun 19	05:39:29	23883	592	-36123	15	Ne	-t	1.5515	0.0393	-1.0164	60.6	-	-	22S	13E
-0921 Jul 18	19:03:22	23881	592	-36122	53	N	t-	-1.2376	0.6067	-0.4319	220.1	-	-	24S	174E
-0921 Dec 13	04:43:49	23874	592	-36117	20	P	-a	-0.9381	1.1228	0.1502	255.0	82.7	-	22N	28E
-0920 Jun 07	06:31:07	23866	591	-36111	25	P	-t	0.8173	1.3924	0.3251	319.9	134.5	-	21S	0W
-0920 Dec 01	20:16:22	23857	591	-36105	30	T	-p	-0.2833	2.3302	1.3459	319.5	204.3	78.9	21N	154E
-0919 May 27	09:17:57	23849	591	-36099	35	T+	pp	0.0305	2.8180	1.7862	357.6	229.1	104.6	19S	42W
-0919 Nov 21	08:22:47	23840	591	-36093	40	T	p-	0.4126	2.1181	1.0840	334.0	202.0	44.1	19N	29W
-0918 May 16	19:03:12	23832	591	-36087	45	P	a-	-0.7363	1.4957	0.5181	293.3	151.2	-	17S	171E
-0918 Nov 10	13:29:45	23823	591	-36081	50	N	t-	1.1455	0.8007	-0.2876	255.8	-	-	16N	106W
-0917 Apr 07	03:49:44	23816	590	-36076	17	N	-a	1.0605	0.8842	-0.0606	230.6	-	-	2S	43E
-0917 May 06	10:38:38	23815	590	-36075	55	N	a-	-1.4347	0.1968	-0.7462	116.6	-	-	15S	63W
-0917 Sep 30	18:22:27	23808	590	-36070	22	N	-t	-1.1933	0.7120	-0.3742	244.5	-	-	2S	177W
-0916 Mar 26	19:52:47	23800	590	-36064	27	T	-a	0.3508	2.2017	1.2268	321.0	203.4	67.9	2N	163E
-0916 Sep 18	22:52:12	23791	590	-36058	32	T	-p	-0.4428	2.0616	1.0296	334.6	200.7	26.8	6S	116E
-0915 Mar 16	06:41:10	23783	590	-36052	37	T	t-	-0.4135	2.1154	1.0834	341.3	206.6	45.0	5N	2E
-0915 Sep 08	10:42:38	23774	589	-36046	42	T	p-	0.2865	2.3207	1.3435	320.5	205.5	79.3	9S	62W
-0914 Mar 05	10:07:27	23766	589	-36040	47	N	t-	-1.1866	0.7203	-0.3581	246.9	-	-	9N	49W
-0914 Aug 29	02:44:24	23757	589	-36034	52	P	a-	0.9710	1.0544	0.0978	247.8	67.2	-	12S	58E
-0913 Jan 23	17:42:42	23750	589	-36029	19	N	-t	1.0392	0.9857	-0.0825	274.4	-	-	22N	162W
-0913 Jul 20	08:25:51	23742	589	-36023	24	P	-a	-0.9245	1.1611	0.1621	273.9	90.4	-	24S	27W
-0912 Jan 13	00:54:45	23733	589	-36017	29	T	-p	0.2872	2.3383	1.3239	333.9	210.4	79.2	23N	88E
-0912 Jul 08	15:50:48	23725	588	-36011	34	T-	pp	-0.1834	2.5468	1.4965	361.9	227.7	96.3	24S	139W

-0911 Jan 01	14:25:46	23717	588	-36005	39	T	p-	-0.4078	2.0967	1.1226	310.6	194.0	50.4	23N	116W
-0911 Jun 27	17:11:04	23708	588	-35999	44	P	t-	0.5814	1.8273	0.7559	348.8	191.6	-	23S	160W
-0911 Dec 22	06:12:17	23700	588	-35993	49	N	a-	-1.0704	0.8817	-0.0939	233.0	-	-	22N	6E
-0910 May 18	06:54:27	23693	588	-35988	16	N	-t	-1.4092	0.2807	-0.7360	151.4	-	-	18S	7W
-0910 Jun 16	18:53:09	23691	588	-35987	54	N	t-	1.3160	0.4655	-0.5784	197.8	-	-	22S	174E
-0910 Nov 12	05:14:26	23684	587	-35982	21	N	-a	1.0337	0.9871	-0.0640	266.6	-	-	16N	17E
-0909 May 07	18:34:48	23676	587	-35976	26	P	-a	-0.5906	1.7566	0.7918	302.7	176.5	-	14S	178E
-0909 Nov 01	08:19:35	23667	587	-35970	31	T	-t	0.3721	2.2245	1.1267	365.1	216.5	56.2	12N	29W
-0908 Apr 26	11:02:45	23659	587	-35964	36	T+	p-	0.1611	2.5327	1.5915	315.4	209.0	93.8	10S	68W
-0908 Oct 20	07:22:48	23650	587	-35958	41	T	p-	-0.3083	2.3418	1.2435	369.3	222.5	74.9	7N	15W
-0907 Apr 16	03:47:27	23642	587	-35952	46	P	a-	0.9071	1.1742	0.2128	263.4	99.4	-	6S	42E
-0907 Oct 09	10:03:29	23634	586	-35946	51	P	a-	-0.9819	1.0822	0.0311	277.7	41.5	-	2N	54W
-0906 Mar 07	03:37:18	23627	586	-35941	18	N	-t	-1.0277	0.9976	-0.0526	273.2	-	-	8N	48E
-0906 Aug 30	10:02:25	23618	586	-35935	23	N	-a	1.0475	0.9183	-0.0466	237.0	-	-	12S	52W
-0905 Feb 24	05:19:17	23610	586	-35929	28	T	-t	-0.3149	2.3238	1.2375	369.2	223.4	74.7	13N	23E
-0905 Aug 20	02:30:51	23601	586	-35923	33	T	-p	0.3473	2.1992	1.2418	311.5	199.2	68.2	16S	61E
-0904 Feb 13	05:32:38	23593	585	-35917	38	T	t-	0.4058	2.1499	1.0775	356.5	212.0	44.4	17N	20E
-0904 Aug 08	17:14:49	23585	585	-35911	43	T	p-	-0.3827	2.1519	1.1597	325.2	202.7	58.7	19S	160W
-0903 Feb 01	11:18:07	23576	585	-35905	48	N	a-	1.0959	0.8585	-0.1639	246.2	-	-	21N	67W
-0903 Jul 29	02:03:03	23568	585	-35899	53	N	t-	-1.1768	0.7214	-0.3233	238.4	-	-	22S	68E
-0903 Dec 23	13:33:32	23561	585	-35894	20	P	-a	-0.9413	1.1161	0.1455	254.2	81.4	-	23N	104W
-0902 Jun 18	12:52:14	23552	585	-35888	25	P	-t	0.9030	1.2352	0.1678	306.4	98.8	-	22S	97W
-0902 Dec 13	05:05:29	23544	584	-35882	30	T	-p	-0.2851	2.3275	1.3421	320.1	204.5	78.7	22N	21E
-0901 Jun 07	15:59:05	23536	584	-35876	35	T+	pp	0.1136	2.6640	1.6351	355.2	227.1	101.3	22S	144W
-0901 Dec 02	16:56:23	23527	584	-35870	40	T	p-	0.4142	2.1167	1.0797	335.2	202.4	43.1	21N	158W
-0900 May 27	02:11:31	23519	584	-35864	45	P	a-	-0.6567	1.6401	0.6659	300.6	166.9	-	20S	63E
-0900 Nov 20	21:39:42	23510	584	-35858	50	N	t-	1.1447	0.8036	-0.2875	256.9	-	-	19N	130E

## 9TH CENTURY BCE

**In the 9th century BCE the total number of lunar eclipses was 225 lunar eclipses: 79 penumbral lunar eclipses, 62 partial lunar eclipses, 84 total lunar eclipses (27 central total lunar eclipses, 57 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-0899 Apr 17	11:24:55	23503	583	-35853	17	N	-a	1.1260	0.7634	-0.1799	217.0	-	-	6S	73W
-0899 May 16	18:03:04	23502	583	-35852	55	N	a-	-1.3618	0.3297	-0.6117	148.9	-	-	18S	175W
-0899 Oct 11	02:12:57	23495	583	-35847	22	N	-t	-1.2091	0.6834	-0.4036	239.8	-	-	3N	63E
-0898 Apr 07	03:22:08	23486	583	-35841	27	T	-a	0.4152	2.0837	1.1082	318.5	198.4	48.8	3S	49E
-0898 Sep 30	06:58:35	23478	583	-35835	32	P	-p	-0.4629	2.0247	0.9930	332.2	197.8	-	1S	8W
-0897 Mar 27	13:53:08	23470	583	-35829	37	T	p-	-0.3538	2.2253	1.1928	345.9	212.9	66.2	1N	108W
-0897 Sep 19	18:59:59	23461	583	-35823	42	T+	p-	0.2586	2.3723	1.3944	320.9	206.6	83.2	5S	172E
-0896 Mar 15	17:04:24	23453	582	-35817	47	N	t-	-1.1300	0.8232	-0.2532	261.5	-	-	5N	156W
-0896 Sep 08	10:58:43	23445	582	-35811	52	P	a-	0.9382	1.1163	0.1564	253.5	84.3	-	8S	67W
-0895 Feb 03	01:25:57	23438	582	-35806	19	N	-t	1.0644	0.9364	-0.1257	267.7	-	-	20N	81E
-0895 Jul 30	15:47:08	23429	582	-35800	24	P	-a	-0.9874	1.0490	0.0437	264.8	47.9	-	22S	138W
-0894 Jan 23	09:10:34	23421	582	-35794	29	T	-p	0.3046	2.3035	1.2948	331.6	208.8	76.2	22N	36W
-0894 Jul 19	22:38:29	23412	581	-35788	34	T-	-p	-0.2555	2.4171	1.3616	361.1	224.4	86.9	23S	118E
-0893 Jan 12	23:03:13	23404	581	-35782	39	T	p-	-0.3949	2.1185	1.1478	310.6	195.0	54.9	23N	115E
-0893 Jul 08	23:39:46	23396	581	-35776	44	P	t-	0.5013	1.9751	0.9017	355.9	203.8	-	23S	102E
-0892 Jan 02	14:56:45	23387	581	-35770	49	N	a-	-1.0654	0.8906	-0.0845	234.2	-	-	23N	125W
-0892 May 28	13:42:35	23380	581	-35765	16	N	-t	-1.4828	0.1438	-0.8692	109.2	-	-	21S	111W
-0892 Jun 27	01:32:15	23379	581	-35764	54	N	t-	1.2336	0.6160	-0.4265	223.5	-	-	23S	73E
-0892 Nov 22	13:40:40	23372	581	-35759	21	N	-a	1.0366	0.9834	-0.0711	267.2	-	-	20N	110W
-0891 May 18	01:49:19	23364	580	-35753	26	P	-a	-0.6644	1.6195	0.6581	294.7	164.1	-	18S	68E
-0891 Nov 11	16:22:59	23355	580	-35747	31	T	-t	0.3768	2.2171	1.1168	365.7	216.2	54.2	16N	151W
-0890 May 07	18:29:30	23347	580	-35741	36	T+	pp	0.0883	2.6657	1.7257	316.5	210.8	97.8	14S	178E
-0890 Oct 31	15:21:47	23338	580	-35735	41	T	p-	-0.3000	2.3573	1.2586	369.3	222.9	76.7	11N	136W
-0889 Apr 27	11:11:08	23330	580	-35729	46	P	a-	0.8408	1.2962	0.3339	273.7	122.7	-	10S	71W
-0889 Oct 20	18:17:09	23322	580	-35723	51	P	a-	-0.9689	1.1055	0.0553	279.1	54.9	-	6N	179W
-0888 Mar 17	10:48:31	23315	579	-35718	18	N	-t	-1.0855	0.8915	-0.1585	261.9	-	-	4N	62W
-0888 Sep 09	18:15:51	23306	579	-35712	23	N	-a	1.0767	0.8654	-0.1010	231.1	-	-	8S	177W
-0887 Mar 06	12:21:18	23298	579	-35706	28	T	-t	-0.3677	2.2253	1.1421	366.2	219.0	59.8	9N	84W
-0887 Aug 30	10:36:07	23290	579	-35700	33	T	-p	0.3867	2.1290	1.1675	310.3	196.2	58.2	12S	62W
-0886 Feb 23	12:54:19	23281	579	-35694	38	T	t-	0.3629	2.2257	1.1592	357.5	215.9	61.9	13N	92W
-0886 Aug 20	00:56:42	23273	578	-35688	43	T	p-	-0.3369	2.2390	1.2406	329.2	206.9	70.3	16S	84E
-0885 Feb 12	19:14:01	23265	578	-35682	48	N	a-	1.0628	0.9160	-0.1000	251.6	-	-	18N	173E
-0885 Aug 09	09:10:19	23256	578	-35676	53	N	t-	-1.1225	0.8239	-0.2269	253.3	-	-	20S	40W

-0884	Jan 03	22:18:52	23249	578	-35671	20	P	-a	-0.9482	1.1022	0.1338	252.7	78.2	-	23N	124E
-0884	Jun 28	19:17:44	23241	578	-35665	25	P	-t	0.9850	1.0849	0.0170	291.6	32.1	-	23S	166E
-0884	Dec 23	13:50:48	23233	578	-35659	30	T	-p	-0.2896	2.3195	1.3335	320.6	204.6	78.1	23N	110W
-0883	Jun 17	22:44:09	23224	577	-35653	35	T+	pp	0.1941	2.5151	1.4886	351.9	223.6	94.6	23S	114E
-0883	Dec 13	01:26:12	23216	577	-35647	40	T	p-	0.4134	2.1193	1.0801	336.5	203.0	43.3	23N	74E
-0882	Jun 07	09:22:15	23208	577	-35641	45	P	a-	-0.5781	1.7828	0.8113	306.7	179.3	-	22S	46W
-0882	Dec 02	05:48:21	23199	577	-35635	50	N	t-	1.1437	0.8064	-0.2865	257.9	-	-	22N	8E
-0881	Apr 28	18:55:11	23192	577	-35630	17	N	-a	1.1955	0.6355	-0.3070	200.7	-	-	10S	172E
-0881	May 28	01:27:08	23191	577	-35629	55	N	a-	-1.2882	0.4643	-0.4762	174.3	-	-	21S	72E
-0881	Oct 22	10:10:37	23184	576	-35624	22	N	-t	-1.2195	0.6643	-0.4228	236.4	-	-	7N	58W
-0880	Apr 17	10:44:05	23176	576	-35618	27	P	-a	0.4850	1.9562	0.9797	315.1	191.6	-	7S	64W
-0880	Oct 10	15:14:14	23167	576	-35612	32	P	-p	-0.4761	2.0001	0.9690	330.2	195.7	-	3N	134W
-0879	Apr 06	20:53:19	23159	576	-35606	37	T	pp	-0.2854	2.3511	1.3179	350.3	218.8	81.6	3S	144E
-0879	Sep 30	03:26:53	23151	576	-35600	42	T+	p-	0.2383	2.4100	1.4313	321.0	207.3	85.6	1S	43E
-0878	Mar 26	23:50:21	23142	576	-35594	47	N	t-	-1.0648	0.9419	-0.1326	276.5	-	-	0N	101E
-0878	Sep 19	19:21:24	23134	575	-35588	52	P	a-	0.9127	1.1648	0.2015	257.9	95.1	-	4S	165E
-0877	Feb 14	09:01:59	23127	575	-35583	19	N	-t	1.0959	0.8753	-0.1805	259.3	-	-	17N	34W
-0877	Aug 10	23:14:34	23119	575	-35577	24	N	-a	-1.0440	0.9484	-0.0633	255.7	-	-	19S	109E
-0876	Feb 03	17:21:24	23110	575	-35571	29	T	-p	0.3268	2.2596	1.2570	329.1	206.8	72.0	19N	159W
-0876	Jul 30	05:29:42	23102	575	-35565	34	T	-t	-0.3238	2.2946	1.2335	359.7	219.9	73.3	21S	14E
-0875	Jan 23	07:36:13	23094	574	-35559	39	T	p-	-0.3783	2.1473	1.1803	310.8	196.4	60.0	21N	14W
-0875	Jul 19	06:13:33	23085	574	-35553	44	T	t-	0.4250	2.1162	1.0407	361.6	213.3	33.1	22S	3E
-0874	Jan 12	23:35:12	23077	574	-35547	49	N	a-	-1.0561	0.9072	-0.0671	236.3	-	-	22N	105E
-0874	Jun 08	20:34:04	23070	574	-35542	16	Ne	-t	-1.5542	0.0112	-0.9987	30.7	-	-	23S	145E
-0874	Jul 08	08:18:43	23069	574	-35541	54	N	t-	1.1558	0.7581	-0.2832	243.7	-	-	23S	29W
-0874	Dec 03	22:05:23	23062	574	-35536	21	N	-a	1.0401	0.9784	-0.0789	267.6	-	-	22N	123E
-0873	May 29	09:05:50	23053	574	-35530	26	P	-a	-0.7369	1.4851	0.5264	285.9	149.4	-	21S	43W
-0873	Nov 23	00:26:09	23045	573	-35524	31	T	-t	0.3813	2.2098	1.1076	366.1	216.0	52.2	19N	87E
-0872	May 18	01:55:33	23037	573	-35518	36	T+	pp	0.0149	2.8001	1.8607	316.9	211.6	99.5	17S	65E
-0872	Nov 10	23:24:27	23029	573	-35512	41	T	p-	-0.2945	2.3673	1.2689	369.0	223.0	77.8	15N	102E
-0871	May 07	18:28:59	23020	573	-35506	46	P	a-	0.7705	1.4260	0.4621	283.7	142.0	-	13S	177E
-0871	Oct 31	02:37:33	23012	573	-35500	51	P	a-	-0.9607	1.1198	0.0710	279.5	61.9	-	11N	54E
-0870	Mar 28	17:48:23	23005	572	-35495	18	N	-t	-1.1513	0.7708	-0.2793	247.2	-	-	0S	170W
-0870	Sep 21	02:38:35	22997	572	-35489	23	N	-a	1.0988	0.8256	-0.1423	226.4	-	-	3S	55E
-0869	Mar 17	19:13:10	22988	572	-35483	28	T	-t	-0.4285	2.1122	1.0321	362.1	212.8	29.4	5N	170E
-0869	Sep 10	18:50:21	22980	572	-35477	33	T	-a	0.4183	2.0732	1.1073	309.3	193.4	47.5	8S	173E
-0868	Mar 05	20:07:22	22972	572	-35471	38	T	t-	0.3122	2.3157	1.2552	358.5	219.8	75.7	9N	158E
-0868	Aug 30	08:45:20	22963	572	-35465	43	T	p-	-0.2977	2.3141	1.3093	332.7	210.1	78.0	13S	35W
-0867	Feb 23	03:02:12	22955	571	-35459	48	N	a-	1.0226	0.9864	-0.0230	258.0	-	-	14N	55E
-0867	Aug 19	16:24:13	22947	571	-35453	53	N	t-	-1.0745	0.9153	-0.1419	265.6	-	-	17S	150W



-0866	Jan 14	06:58:11	22940	571	-35448	20	P	-a	-0.9601	1.0791	0.1133	250.5	72.2	-	22N	6W
-0866	Jul 10	01:48:45	22932	571	-35442	25	N	-t	1.0624	0.9434	-0.1254	275.7	-	-	23S	68E
-0865	Jan 03	22:31:57	22923	571	-35436	30	T	-p	-0.2968	2.3065	1.3203	321.0	204.6	77.1	23N	120E
-0865	Jun 29	05:34:00	22915	571	-35430	35	T+	pp	0.2716	2.3719	1.3474	347.9	218.7	84.1	24S	11E
-0865	Dec 24	09:52:52	22907	570	-35424	40	T	p-	0.4109	2.1248	1.0838	337.8	203.8	44.4	24N	52W
-0864	Jun 17	16:35:41	22899	570	-35418	45	P	a-	-0.5012	1.9229	0.9536	311.6	189.0	-	24S	155W
-0864	Dec 12	13:55:34	22890	570	-35412	50	N	t-	1.1416	0.8107	-0.2833	259.0	-	-	24N	114W
-0863	May 09	02:21:03	22883	570	-35407	17	N	-a	1.2682	0.5020	-0.4404	180.9	-	-	13S	59E
-0863	Jun 07	08:50:50	22882	570	-35406	55	N	a-	-1.2142	0.6001	-0.3402	195.4	-	-	23S	40W
-0863	Nov 01	18:14:59	22875	570	-35401	22	N	-t	-1.2251	0.6538	-0.4328	234.3	-	-	11N	179E
-0862	Apr 28	18:00:29	22867	569	-35395	27	P	-a	0.5584	1.8223	0.8442	310.6	182.8	-	11S	176W
-0862	Oct 21	23:36:15	22859	569	-35389	32	P	-p	-0.4848	1.9837	0.9537	328.4	194.1	-	8N	99E
-0861	Apr 18	03:47:39	22850	569	-35383	37	T-	pp	-0.2130	2.4845	1.4500	354.3	223.7	92.6	7S	38E
-0861	Oct 11	12:00:44	22842	569	-35377	42	T+	p-	0.2236	2.4372	1.4580	320.9	207.6	87.1	4N	87W
-0860	Apr 06	06:29:11	22834	569	-35371	47	Nx	t-	-0.9937	1.0714	-0.0014	291.0	-	-	4S	2W
-0860	Sep 30	03:50:53	22825	569	-35365	52	P	a-	0.8930	1.2026	0.2360	261.3	102.5	-	0N	36E
-0859	Feb 24	16:30:01	22818	568	-35360	19	N	-t	1.1347	0.8010	-0.2484	248.8	-	-	13N	147W
-0859	Aug 21	06:49:05	22810	568	-35354	24	N	-a	-1.0940	0.8599	-0.1584	247.0	-	-	16S	6W
-0858	Feb 14	01:22:44	22802	568	-35348	29	T	-p	0.3579	2.1995	1.2030	326.0	204.0	65.1	16N	79E
-0858	Aug 10	12:29:39	22794	568	-35342	34	T	-t	-0.3844	2.1863	1.1196	357.9	214.8	54.6	19S	92W
-0857	Feb 03	16:00:50	22785	568	-35336	39	T	p-	-0.3540	2.1898	1.2266	311.4	198.3	66.2	19N	141W
-0857	Jul 30	12:55:30	22777	567	-35330	44	T	t-	0.3550	2.2458	1.1680	365.9	220.2	64.4	21S	99W
-0856	Jan 24	08:06:15	22769	567	-35324	49	N	a-	-1.0411	0.9342	-0.0392	239.5	-	-	20N	23W
-0856	Jul 18	15:12:21	22761	567	-35318	54	N	t-	1.0824	0.8925	-0.1481	260.0	-	-	22S	134W
-0856	Dec 14	06:27:48	22754	567	-35313	21	N	-a	1.0447	0.9711	-0.0883	267.7	-	-	24N	3W
-0855	Jun 08	16:22:07	22745	567	-35307	26	P	-a	-0.8102	1.3496	0.3929	276.1	131.4	-	23S	153W
-0855	Dec 03	08:30:39	22737	567	-35301	31	T	-t	0.3845	2.2045	1.1015	366.4	215.9	50.8	22N	35W
-0854	May 29	09:19:52	22729	566	-35295	36	T-	pp	-0.0600	2.7175	1.7778	316.8	211.3	98.8	20S	48W
-0854	Nov 22	07:30:12	22721	566	-35289	41	T	p-	-0.2909	2.3731	1.2760	368.4	222.9	78.5	18N	20W
-0853	May 19	01:44:08	22712	566	-35283	46	P	a-	0.6985	1.5593	0.5932	293.0	158.1	-	17S	67E
-0853	Nov 11	11:03:38	22704	566	-35277	51	P	a-	-0.9563	1.1270	0.0802	279.2	65.5	-	14N	74W
-0852	Apr 08	00:40:08	22697	566	-35272	18	N	-t	-1.2225	0.6402	-0.4101	228.9	-	-	5S	85E
-0852	May 07	13:07:00	22696	566	-35271	56	Nb	t-	1.5205	0.0781	-0.9418	81.6	-	-	13S	103W
-0852	Oct 01	11:08:42	22689	565	-35266	23	N	-a	1.1153	0.7961	-0.1733	222.7	-	-	1N	74W
-0851	Mar 28	01:57:07	22681	565	-35260	28	P	-t	-0.4957	1.9873	0.9103	356.9	204.5	-	0N	67E
-0851	Sep 21	03:11:34	22673	565	-35254	33	T	-a	0.4436	2.0289	1.0588	308.6	191.1	35.7	4S	46E
-0850	Mar 17	03:13:05	22664	565	-35248	38	T+	p-	0.2548	2.4180	1.3635	359.3	223.4	86.7	5N	49E
-0850	Sep 10	16:41:37	22656	565	-35242	43	T-	p-	-0.2658	2.3759	1.3647	335.6	212.5	83.1	9S	156W
-0849	Mar 06	10:44:08	22648	565	-35236	48	P	a-	0.9766	1.0676	0.0647	264.8	57.7	-	10N	62W
-0849	Aug 30	23:44:49	22640	564	-35230	53	N	t-	-1.0325	0.9954	-0.0679	275.8	-	-	13S	99E

-0848	Jan 25	15:30:58	22633	564	-35225	20	P	-a	-0.9775	1.0458	0.0828	247.3	61.9	-	20N	134W
-0848	Jul 20	08:27:03	22624	564	-35219	25	N	-t	1.1336	0.8131	-0.2567	259.1	-	-	22S	32W
-0847	Jan 14	07:05:24	22616	564	-35213	30	T	-p	-0.3101	2.2820	1.2959	321.2	204.2	74.9	22N	9W
-0847	Jul 09	12:30:32	22608	564	-35207	35	T	-p	0.3445	2.2375	1.2144	343.2	212.7	69.0	23S	94W
-0846	Jan 03	18:12:22	22600	563	-35201	40	T	p-	0.4033	2.1392	1.0971	339.4	205.1	47.7	24N	177W
-0846	Jun 28	23:54:35	22592	563	-35195	45	T	a-	-0.4279	2.0567	1.0888	315.4	196.5	44.3	24S	94E
-0846	Dec 23	21:56:58	22583	563	-35189	50	N	t-	1.1355	0.8221	-0.2721	260.9	-	-	25N	125E
-0845	May 20	09:45:07	22576	563	-35184	17	N	-a	1.3421	0.3667	-0.5763	156.8	-	-	16S	54W
-0845	Jun 18	16:17:27	22575	563	-35183	55	N	a-	-1.1423	0.7322	-0.2086	212.9	-	-	24S	152W
-0845	Nov 13	02:24:21	22568	563	-35178	22	N	-t	-1.2270	0.6498	-0.4356	233.0	-	-	15N	56E
-0844	May 09	01:10:23	22560	563	-35172	27	P	-a	0.6363	1.6805	0.7002	304.9	171.1	-	14S	75E
-0844	Nov 01	08:05:36	22552	562	-35166	32	P	-p	-0.4882	1.9766	0.9481	327.1	193.1	-	12N	30W
-0843	Apr 28	10:32:55	22543	562	-35160	37	T-	pp	-0.1344	2.6296	1.5935	357.6	227.5	100.2	11S	65W
-0843	Oct 21	20:42:00	22535	562	-35154	42	T+	p-	0.2145	2.4540	1.4746	320.7	207.6	88.0	8N	141E
-0842	Apr 17	12:59:22	22527	562	-35148	47	P	t-	-0.9156	1.2140	0.1428	305.2	91.6	-	8S	101W
-0842	Oct 11	12:28:00	22519	562	-35142	52	P	a-	0.8799	1.2283	0.2585	263.7	107.0	-	5N	96W
-0841	Mar 07	23:51:36	22512	561	-35137	19	N	-t	1.1794	0.7156	-0.3273	236.1	-	-	10N	100E
-0841	Sep 01	14:29:27	22504	561	-35131	24	N	-a	-1.1383	0.7820	-0.2430	238.5	-	-	13S	123W
-0840	Feb 25	09:18:56	22496	561	-35125	29	T	-p	0.3941	2.1301	1.1397	322.5	200.6	55.0	13N	41W
-0840	Aug 20	19:35:30	22487	561	-35119	34	T	-t	-0.4395	2.0880	1.0157	355.8	209.1	20.5	16S	161E
-0839	Feb 14	00:18:20	22479	561	-35113	39	T	p-	-0.3239	2.2433	1.2838	312.2	200.4	72.7	16N	94E
-0839	Aug 09	19:45:24	22471	561	-35107	44	T	t-	0.2912	2.3642	1.2839	369.1	225.2	80.3	18S	158E
-0838	Feb 03	16:29:37	22463	560	-35101	49	N	a-	-1.0205	0.9716	-0.0008	243.6	-	-	18N	150W
-0838	Jul 29	22:15:38	22455	560	-35095	54	Nx	t-	1.0157	1.0145	-0.0256	272.8	-	-	20S	120E
-0838	Dec 25	14:44:30	22448	560	-35090	21	N	-a	1.0531	0.9564	-0.1045	266.9	-	-	25N	127W
-0837	Jun 19	23:43:33	22439	560	-35084	26	P	-a	-0.8798	1.2212	0.2659	265.8	109.9	-	24S	96E
-0837	Dec 14	16:31:58	22431	560	-35078	31	T	-t	0.3899	2.1946	1.0914	366.4	215.5	48.4	23N	155W
-0836	Jun 08	16:44:34	22423	560	-35072	36	T-	-p	-0.1344	2.5813	1.6409	316.1	209.9	95.6	22S	160W
-0836	Dec 02	15:36:51	22415	559	-35066	41	T	p-	-0.2876	2.3783	1.2831	367.7	222.9	79.2	21N	142W
-0835	May 29	08:56:30	22407	559	-35060	46	P	a-	0.6246	1.6963	0.7273	301.6	171.8	-	19S	43W
-0835	Nov 21	19:32:01	22398	559	-35054	51	P	a-	-0.9530	1.1316	0.0875	278.6	68.2	-	18N	158E
-0834	Apr 19	07:22:33	22392	559	-35049	18	N	-t	-1.3001	0.4983	-0.5526	205.3	-	-	9S	18W
-0834	May 18	19:53:18	22390	559	-35048	56	N	t-	1.4475	0.2136	-0.8092	133.8	-	-	16S	153E
-0834	Oct 12	19:46:41	22383	559	-35043	23	N	-a	1.1260	0.7772	-0.1934	220.3	-	-	6N	154E
-0833	Apr 08	08:33:13	22375	558	-35037	28	P	-t	-0.5689	1.8515	0.7773	350.2	193.5	-	4S	34W
-0833	Oct 02	11:39:46	22367	558	-35031	33	T	-a	0.4628	1.9959	1.0216	308.2	189.2	21.9	1N	83W
-0832	Mar 27	10:11:55	22359	558	-35025	38	T+	pp	0.1908	2.5324	1.4838	359.7	226.3	95.2	1N	58W
-0832	Sep 21	00:45:08	22351	558	-35019	43	T-	p-	-0.2409	2.4249	1.4073	338.2	214.4	86.6	4S	81E
-0831	Mar 16	18:17:18	22342	558	-35013	48	P	a-	0.9224	1.1637	0.1672	272.3	91.2	-	6N	178W
-0831	Sep 10	07:13:56	22334	558	-35007	53	Nx	t-	-0.9980	1.0618	-0.0077	284.1	-	-	9S	15W

-0830 Feb 04	23:56:14	22327	557	-35002	20	P	-a	-1.0011	1.0009	0.0408	242.9	43.7	-	17N	98E
-0830 Jul 31	15:13:50	22319	557	-34996	25	N	-t	1.1984	0.6950	-0.3760	242.0	-	-	20S	135W
-0829 Jan 25	15:31:58	22311	557	-34990	30	T	-p	-0.3285	2.2480	1.2622	321.1	203.4	71.5	21N	136W
-0829 Jul 20	19:35:08	22303	557	-34984	35	T	-t	0.4116	2.1138	1.0918	338.2	206.0	46.9	22S	159E
-0828 Jan 15	02:26:16	22295	557	-34978	40	T	p-	0.3920	2.1603	1.1175	341.2	206.8	52.3	23N	60E
-0828 Jul 09	07:17:36	22287	556	-34972	45	T	a-	-0.3574	2.1856	1.2186	318.4	202.2	66.6	24S	17W
-0827 Jan 03	05:54:28	22278	556	-34966	50	N	t-	1.1267	0.8380	-0.2558	263.4	-	-	25N	6E
-0827 May 30	17:07:43	22272	556	-34961	17	N	-a	1.4165	0.2309	-0.7133	126.2	-	-	19S	166W
-0827 Jun 28	23:46:41	22270	556	-34960	55	N	a-	-1.0728	0.8603	-0.0816	227.8	-	-	25S	95E
-0827 Nov 23	10:36:05	22263	556	-34955	22	N	-t	-1.2275	0.6478	-0.4355	232.1	-	-	18N	68W
-0826 May 20	08:17:36	22255	556	-34949	27	P	-a	0.7153	1.5369	0.5538	298.0	156.3	-	17S	34W
-0826 Nov 12	16:38:41	22247	556	-34943	32	P	-p	-0.4890	1.9741	0.9477	325.8	192.5	-	15N	160W
-0825 May 09	17:14:37	22239	555	-34937	37	T-	pp	-0.0535	2.7790	1.7410	360.0	229.9	104.3	15S	168W
-0825 Nov 02	05:27:01	22231	555	-34931	42	T+	p-	0.2084	2.4652	1.4859	320.3	207.6	88.5	12N	8E
-0824 Apr 27	19:25:13	22223	555	-34925	47	P	t-	-0.8339	1.3633	0.2933	318.2	128.5	-	12S	160E
-0824 Oct 21	21:10:15	22214	555	-34919	52	P	a-	0.8713	1.2455	0.2729	265.5	109.8	-	9N	132E
-0823 Mar 18	07:04:21	22208	555	-34914	19	N	-t	1.2318	0.6162	-0.4202	220.2	-	-	5N	10W
-0823 Apr 16	20:27:49	22206	555	-34913	57	Nb	t-	-1.5588	0.0250	-1.0289	48.2	-	-	8S	145E
-0823 Sep 11	22:18:23	22199	554	-34908	24	N	-a	-1.1747	0.7185	-0.3130	231.2	-	-	9S	118E
-0822 Mar 07	17:06:03	22191	554	-34902	29	T	-a	0.4384	2.0457	1.0613	318.3	196.0	37.3	9N	160W
-0822 Sep 01	02:50:59	22183	554	-34896	34	P	-t	-0.4859	2.0058	0.9279	353.9	203.6	-	12S	50E
-0821 Feb 25	08:26:47	22175	554	-34890	39	T	p-	-0.2860	2.3108	1.3550	313.2	202.9	79.4	12N	30W
-0821 Aug 21	02:46:10	22167	554	-34884	44	T+	pp	0.2360	2.4666	1.3839	371.3	228.5	89.7	15S	51E
-0820 Feb 15	00:43:57	22159	554	-34878	49	P	a-	-0.9931	1.0213	0.0501	248.9	49.0	-	15N	86E
-0820 Aug 09	05:27:29	22150	553	-34872	54	P	h-	0.9549	1.1260	0.0860	283.1	68.9	-	18S	11E
-0819 Jan 04	22:56:10	22144	553	-34867	21	N	-h	1.0649	0.9351	-0.1266	265.3	-	-	25N	111E
-0819 Jun 30	07:07:35	22136	553	-34861	26	P	-a	-0.9478	1.0960	0.1413	254.7	81.4	-	25S	16W
-0819 Dec 25	00:29:47	22127	553	-34855	31	T	-t	0.3980	2.1795	1.0770	366.2	214.9	44.7	24N	86E
-0818 Jun 20	00:10:29	22119	553	-34849	36	T-	-p	-0.2077	2.4477	1.5057	314.7	207.5	89.9	24S	88E
-0818 Dec 13	23:43:39	22111	552	-34843	41	T	p-	-0.2837	2.3841	1.2917	366.9	222.9	80.0	23N	96E
-0817 Jun 09	16:07:38	22103	552	-34837	46	P	a-	0.5505	1.8340	0.8616	309.3	183.3	-	21S	152W
-0817 Dec 03	04:02:19	22095	552	-34831	51	P	a-	-0.9506	1.1344	0.0935	277.8	70.2	-	20N	30E
-0816 Apr 29	13:59:23	22088	552	-34826	18	N	-t	-1.3808	0.3506	-0.7013	175.1	-	-	13S	119W
-0816 May 29	02:36:44	22087	552	-34825	56	N	t-	1.3725	0.3528	-0.6733	170.5	-	-	19S	51E
-0816 Oct 23	04:30:24	22080	552	-34820	23	N	-a	1.1321	0.7665	-0.2051	218.9	-	-	10N	21E
-0815 Apr 18	15:02:28	22072	552	-34814	28	P	-t	-0.6475	1.7061	0.6345	342.0	179.1	-	8S	134W
-0815 Oct 12	20:14:22	22064	551	-34808	33	P	-a	0.4761	1.9734	0.9952	308.2	187.9	-	5N	146E
-0814 Apr 07	17:05:48	22056	551	-34802	38	T+	pp	0.1220	2.6557	1.6127	359.6	228.3	101.0	3S	164W
-0814 Oct 02	08:54:45	22047	551	-34796	43	T-	p-	-0.2218	2.4628	1.4393	340.5	215.9	88.9	0N	43W
-0813 Mar 28	01:46:00	22039	551	-34790	48	P	a-	0.8638	1.2683	0.2778	279.6	115.3	-	2N	68E

-0813 Sep 21	14:50:41	22031	551	-34784	53	P	t-	-0.9703	1.1157	0.0404	290.6	48.5	-	5S	131W
-0812 Feb 16	08:13:37	22024	550	-34779	20	N	-a	-1.0313	0.9442	-0.0131	237.3	-	-	14N	27W
-0812 Mar 16	16:31:09	22023	550	-34778	58	Nb	a-	1.5331	0.0218	-0.9322	39.6	-	-	6N	152W
-0812 Aug 10	22:09:20	22016	550	-34773	25	N	-t	1.2560	0.5899	-0.4826	225.0	-	-	17S	120E
-0811 Feb 04	23:49:28	22008	550	-34767	30	T	-p	-0.3538	2.2015	1.2161	320.6	202.0	66.1	18N	99E
-0811 Jul 31	02:49:03	22000	550	-34761	35	P	-t	0.4716	2.0035	0.9822	333.0	198.7	-	20S	50E
-0810 Jan 25	10:29:22	21992	550	-34755	40	T	p-	0.3730	2.1954	1.1522	343.4	209.2	59.1	21N	62W
-0810 Jul 20	14:48:57	21984	550	-34749	45	T	p-	-0.2933	2.3029	1.3363	320.4	206.2	79.1	23S	131W
-0809 Jan 14	13:43:38	21976	549	-34743	50	N	t-	1.1121	0.8643	-0.2285	267.1	-	-	24N	111W
-0809 Jun 11	00:30:19	21969	549	-34738	17	Ne	-a	1.4904	0.0962	-0.8499	82.7	-	-	21S	82E
-0809 Jul 10	07:20:03	21967	549	-34737	55	P	a-	-1.0067	0.9824	0.0388	240.4	42.7	-	25S	19W
-0809 Dec 04	18:49:04	21961	549	-34732	22	N	-t	-1.2273	0.6468	-0.4338	231.3	-	-	20N	168E
-0808 May 30	15:21:25	21953	549	-34726	27	P	-a	0.7959	1.3909	0.4044	289.6	137.1	-	20S	141W
-0808 Nov 23	01:15:37	21944	549	-34720	32	P	-p	-0.4875	1.9755	0.9516	324.7	192.3	-	19N	70E
-0807 May 19	23:49:37	21936	549	-34714	37	T+	pp	0.0320	2.8197	1.7792	361.5	230.8	105.0	18S	92E
-0807 Nov 12	14:17:12	21928	548	-34708	42	T+	p-	0.2062	2.4690	1.4901	319.9	207.4	88.6	16N	126W
-0806 May 09	01:46:14	21920	548	-34702	47	P	t-	-0.7480	1.5204	0.4513	330.0	155.6	-	15S	63E
-0806 Nov 02	05:57:12	21912	548	-34696	52	P	a-	0.8670	1.2547	0.2796	266.6	111.1	-	13N	1W
-0805 Mar 29	14:12:27	21905	548	-34691	19	N	-t	1.2885	0.5091	-0.5211	201.3	-	-	1N	119W
-0805 Apr 28	03:05:18	21904	548	-34690	57	N	t-	-1.4786	0.1699	-0.8796	123.5	-	-	12S	43E
-0805 Sep 23	06:14:15	21897	548	-34685	24	N	-a	-1.2044	0.6674	-0.3706	225.0	-	-	4S	3W
-0804 Mar 18	00:47:29	21889	547	-34679	29	P	-a	0.4882	1.9514	0.9729	313.5	190.2	-	5N	83E
-0804 Sep 11	10:13:19	21881	547	-34673	34	P	-t	-0.5260	1.9348	0.8516	351.9	198.1	-	8S	62W
-0803 Mar 07	16:28:27	21873	547	-34667	39	T-	p-	-0.2424	2.3892	1.4369	314.3	205.3	85.5	8N	152W
-0803 Aug 31	09:56:17	21865	547	-34661	44	T+	pp	0.1879	2.5562	1.4711	372.7	230.7	95.7	12S	58W
-0802 Feb 25	08:49:11	21857	547	-34655	49	P	a-	-0.9587	1.0840	0.1137	255.2	73.4	-	11N	37W
-0802 Aug 20	12:50:31	21849	547	-34649	54	P	h-	0.9020	1.2232	0.1832	291.0	98.9	-	15S	101W
-0801 Jan 16	06:59:44	21842	546	-34644	21	N	-h	1.0828	0.9025	-0.1596	262.3	-	-	23N	10W
-0801 Jul 11	14:37:35	21834	546	-34638	26	P	-a	-1.0115	0.9791	0.0247	243.3	34.5	-	24S	129W
-0800 Jan 05	08:21:23	21826	546	-34632	31	T	-t	0.4110	2.1549	1.0538	365.4	213.7	37.7	24N	32W
-0800 Jun 30	07:39:33	21818	546	-34626	36	T	-p	-0.2783	2.3192	1.3750	312.9	204.0	81.3	24S	25W
-0800 Dec 24	07:46:27	21809	546	-34620	41	T	p-	-0.2760	2.3964	1.3076	366.1	223.1	81.6	23N	25W

## 8TH CENTURY BCE

**In the 8th century BCE the total number of lunar eclipses was 239 lunar eclipses:  
87 penumbral lunar eclipses, 88 partial lunar eclipses, 64 total lunar eclipses  
(43 central total lunar eclipses, 21 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-0799 Jun 19	23:18:53	21801	545	-34614	46	P	a-	0.4772	1.9705	0.9940	316.2	192.9	-	23S	99E
-0799 Dec 13	12:31:27	21793	545	-34608	51	P	a-	-0.9463	1.1402	0.1034	277.3	73.5	-	22N	98W
-0798 May 10	20:30:29	21787	545	-34603	18	N	-t	-1.4648	0.1972	-0.8562	133.5	-	-	16S	141E
-0798 Jun 09	09:19:03	21785	545	-34602	56	N	t-	1.2972	0.4929	-0.5371	199.7	-	-	21S	51W
-0798 Nov 03	13:18:32	21778	545	-34597	23	N	-a	1.1351	0.7613	-0.2110	218.1	-	-	14N	112W
-0797 Apr 29	21:27:10	21770	545	-34591	28	P	-t	-0.7297	1.5541	0.4849	332.0	160.3	-	12S	128E
-0797 Oct 24	04:55:06	21762	545	-34585	33	P	-a	0.4843	1.9603	0.9784	308.5	187.2	-	9N	14E
-0796 Apr 17	23:53:40	21754	544	-34579	38	T+	pp	0.0473	2.7902	1.7526	358.8	229.3	104.2	8S	92E
-0796 Oct 12	17:11:22	21746	544	-34573	43	T-	p-	-0.2094	2.4886	1.4593	342.6	216.9	90.3	5N	169W
-0795 Apr 07	09:07:52	21738	544	-34567	48	P	a-	0.7983	1.3856	0.4008	287.1	135.6	-	3S	45W
-0795 Oct 01	22:35:37	21730	544	-34561	53	P	t-	-0.9496	1.1563	0.0755	295.6	66.2	-	1S	110E
-0794 Feb 26	16:22:14	21723	544	-34556	20	N	-a	-1.0686	0.8743	-0.0803	229.9	-	-	11N	151W
-0794 Mar 28	00:16:17	21722	544	-34555	58	N	a-	1.4785	0.1200	-0.8301	91.9	-	-	2N	89E
-0794 Aug 22	05:15:41	21715	543	-34550	25	N	-t	1.3053	0.5003	-0.5737	208.6	-	-	14S	12E
-0793 Feb 16	07:59:14	21707	543	-34544	30	T	-a	-0.3848	2.1443	1.1594	319.8	200.0	58.0	15N	25W
-0793 Aug 11	10:11:15	21699	543	-34538	35	P	-t	0.5256	1.9041	0.8832	327.8	191.2	-	18S	62W
-0792 Feb 05	18:25:05	21691	543	-34532	40	T	p-	0.3487	2.2400	1.1968	345.8	212.0	66.4	19N	179E
-0792 Jul 30	22:26:38	21683	543	-34526	45	T-	p-	-0.2341	2.4116	1.4449	321.7	209.0	87.2	21S	114E
-0791 Jan 24	21:24:51	21675	543	-34520	50	N	t-	1.0911	0.9020	-0.1892	272.1	-	-	22N	133E
-0791 Jul 20	14:58:40	21667	542	-34514	55	P	a-	-0.9449	1.0970	0.1510	251.0	82.9	-	23S	134W
-0791 Dec 15	03:01:16	21660	542	-34509	22	N	-t	-1.2284	0.6429	-0.4342	229.9	-	-	22N	45E
-0790 Jun 10	22:25:34	21652	542	-34503	27	P	-a	0.8753	1.2472	0.2568	280.0	112.0	-	21S	112E
-0790 Dec 04	09:51:54	21644	542	-34497	32	P	-p	-0.4874	1.9741	0.9535	323.4	191.9	-	21N	59W
-0789 May 31	06:24:19	21636	542	-34491	37	T+	pp	0.1169	2.6655	1.6220	362.0	229.9	101.9	20S	8W
-0789 Nov 23	23:08:48	21628	541	-34485	42	T+	p-	0.2050	2.4707	1.4928	319.4	207.2	88.6	19N	101E
-0788 May 19	08:04:15	21620	541	-34479	47	P	t-	-0.6594	1.6827	0.6141	340.5	176.9	-	18S	33W
-0788 Nov 12	14:47:16	21612	541	-34473	52	P	a-	0.8656	1.2584	0.2811	267.3	111.5	-	17N	135W
-0787 Apr 08	21:13:44	21605	541	-34468	19	N	-t	1.3511	0.3912	-0.6330	177.6	-	-	3S	133E

-0787	May 08	09:39:14	21604	541	-34467	57	N	t-	-1.3945	0.3222	-0.7233	167.1	-	-	16S	57W
-0787	Oct 03	14:17:29	21597	541	-34462	24	N	-a	-1.2274	0.6281	-0.4160	220.1	-	-	0S	125W
-0786	Mar 29	08:21:04	21589	541	-34456	29	P	-a	0.5453	1.8439	0.8708	307.8	182.8	-	1N	33W
-0786	Sep 22	17:45:37	21581	540	-34450	34	P	-t	-0.5575	1.8796	0.7913	350.4	193.3	-	4S	177W
-0785	Mar 19	00:21:53	21573	540	-34444	39	T-	p-	-0.1916	2.4808	1.5316	315.4	207.6	90.9	4N	87E
-0785	Sep 11	17:16:15	21565	540	-34438	44	T+	pp	0.1473	2.6318	1.5444	373.6	232.0	99.4	8S	169W
-0784	Mar 07	16:45:22	21557	540	-34432	49	P	a-	-0.9174	1.1593	0.1899	262.3	94.1	-	7N	158W
-0784	Aug 30	20:23:33	21549	540	-34426	54	P	h-	0.8560	1.3075	0.2674	297.2	117.6	-	11S	144E
-0783	Jan 26	14:54:18	21542	539	-34421	21	N	-h	1.1072	0.8578	-0.2042	257.6	-	-	22N	129W
-0783	Jul 21	22:13:07	21534	539	-34415	26	N	-a	-1.0710	0.8702	-0.0848	231.6	-	-	23S	117E
-0783	Aug 20	06:56:03	21533	539	-34414	64	N	a-	1.5168	0.0659	-0.9161	70.6	-	-	14S	14W
-0782	Jan 15	16:06:48	21526	539	-34409	31	T	-t	0.4289	2.1210	1.0220	364.2	211.9	24.4	23N	149W
-0782	Jul 11	15:12:22	21518	539	-34403	36	T	-p	-0.3454	2.1975	1.2505	310.6	199.7	69.4	24S	139W
-0781	Jan 04	15:45:56	21510	539	-34397	41	T-	p-	-0.2650	2.4144	1.3299	365.3	223.5	83.7	23N	145W
-0781	Jul 01	06:32:09	21502	539	-34391	46	T	p-	0.4063	2.1030	1.1218	322.2	200.7	52.0	23S	10W
-0781	Dec 24	20:59:50	21494	538	-34385	51	P	a-	-0.9408	1.1482	0.1158	276.9	77.4	-	23N	135E
-0780	May 21	02:57:22	21487	538	-34380	18	Ne	-t	-1.5509	0.0401	-1.0150	61.2	-	-	20S	43E
-0780	Jun 19	16:00:13	21486	538	-34379	56	N	t-	1.2215	0.6341	-0.4002	224.4	-	-	22S	152W
-0780	Nov 13	22:10:31	21479	538	-34374	23	N	-a	1.1354	0.7609	-0.2116	218.0	-	-	18N	114E
-0780	Dec 13	09:08:19	21478	538	-34373	61	N	a-	-1.5532	0.0001	-0.9838	3.3	-	-	21N	48W
-0779	May 10	03:48:39	21471	538	-34368	28	P	-t	-0.8145	1.3974	0.3302	320.2	135.4	-	16S	30E
-0779	Nov 03	13:39:20	21463	538	-34362	33	P	-a	0.4891	1.9530	0.9678	309.1	186.8	-	13N	118W
-0778	Apr 29	06:39:47	21455	538	-34356	38	T-	pp	-0.0299	2.8196	1.7870	357.2	228.8	104.4	12S	12W
-0778	Oct 24	01:32:47	21447	537	-34350	43	T-	p-	-0.2014	2.5058	1.4714	344.4	217.8	91.2	9N	64E
-0777	Apr 18	16:27:08	21439	537	-34344	48	P	a-	0.7298	1.5086	0.5290	293.9	152.3	-	7S	157W
-0777	Oct 13	06:26:07	21431	537	-34338	53	P	t-	-0.9340	1.1875	0.1019	299.6	76.7	-	4N	9W
-0776	Mar 09	00:23:22	21424	537	-34333	20	N	-a	-1.1121	0.7932	-0.1588	220.8	-	-	7N	87E
-0776	Apr 07	07:56:10	21423	537	-34332	58	N	a-	1.4194	0.2269	-0.7200	124.9	-	-	2S	28W
-0776	Sep 01	12:32:22	21416	537	-34327	25	N	-t	1.3464	0.4255	-0.6498	193.5	-	-	10S	99W
-0775	Feb 26	15:57:41	21408	536	-34321	30	T	-a	-0.4246	2.0712	1.0866	318.4	196.8	43.8	11N	146W
-0775	Aug 21	17:44:55	21400	536	-34315	35	P	-h	0.5710	1.8207	0.8001	322.9	184.1	-	15S	177W
-0774	Feb 16	02:08:51	21392	536	-34309	40	T	p-	0.3156	2.3007	1.2575	348.5	215.3	74.6	15N	62E
-0774	Aug 11	06:13:54	21384	536	-34303	45	T-	p-	-0.1823	2.5069	1.5397	322.5	210.7	92.3	18S	4W
-0773	Feb 05	04:55:55	21376	536	-34297	50	N	t-	1.0623	0.9538	-0.1354	278.5	-	-	19N	20E
-0773	Jul 31	22:44:03	21368	536	-34291	55	P	a-	-0.8889	1.2012	0.2525	259.9	105.7	-	22S	109E
-0773	Dec 26	11:11:34	21361	535	-34286	22	N	-t	-1.2316	0.6350	-0.4378	227.8	-	-	23N	78W
-0772	Jun 21	05:27:51	21353	535	-34280	27	P	-a	0.9549	1.1035	0.1084	268.8	74.6	-	23S	6E
-0772	Dec 14	18:29:19	21345	535	-34274	32	P	-p	-0.4869	1.9731	0.9563	322.1	191.5	-	23N	171E
-0771	Jun 10	12:56:05	21337	535	-34268	37	T+	pp	0.2029	2.5093	1.4623	361.3	227.2	94.5	22S	107W
-0771	Dec 04	08:01:24	21329	535	-34262	42	T+	p-	0.2045	2.4709	1.4944	318.9	207.0	88.7	22N	33W

-0770 May 30	14:21:18	21321	534	-34256	47	P	t-	-0.5699	1.8468	0.7784	349.5	193.7	-	21S	129W
-0770 Nov 23	23:39:34	21313	534	-34250	52	P	a-	0.8667	1.2570	0.2781	267.7	111.1	-	20N	91E
-0769 Apr 20	04:12:21	21307	534	-34245	19	N	-t	1.4165	0.2683	-0.7503	148.0	-	-	7S	26E
-0769 May 19	16:13:16	21305	534	-34244	57	N	t-	-1.3091	0.4771	-0.5646	199.7	-	-	19S	157W
-0769 Oct 14	22:25:55	21299	534	-34239	24	N	-a	-1.2454	0.5979	-0.4519	216.3	-	-	4N	111E
-0768 Apr 08	15:50:56	21291	534	-34233	29	P	-a	0.6062	1.7296	0.7616	301.3	173.8	-	4S	148W
-0768 Oct 03	01:24:44	21283	534	-34227	34	P	-t	-0.5831	1.8350	0.7421	349.1	189.0	-	0N	66E
-0767 Mar 29	08:08:13	21275	533	-34221	39	T-	p-	-0.1346	2.5839	1.6376	316.3	209.5	95.3	0S	32W
-0767 Sep 22	00:46:22	21267	533	-34215	44	T+	pp	0.1145	2.6929	1.6036	374.0	232.7	101.5	4S	76E
-0766 Mar 19	00:33:21	21259	533	-34209	49	P	a-	-0.8698	1.2464	0.2774	270.0	112.6	-	3N	83E
-0766 Sep 11	04:07:02	21251	533	-34203	54	P	a-	0.8177	1.3778	0.3377	301.7	130.4	-	7S	26E
-0765 Feb 06	22:38:54	21244	533	-34198	21	N	-t	1.1387	0.7997	-0.2620	250.8	-	-	19N	114E
-0765 Aug 02	05:56:51	21236	532	-34192	26	N	-a	-1.1243	0.7729	-0.1830	220.1	-	-	21S	0E
-0765 Aug 31	14:54:22	21235	532	-34191	64	N	a-	1.4741	0.1444	-0.8379	103.5	-	-	11S	135W
-0764 Jan 26	23:43:21	21228	532	-34186	31	P	-t	0.4539	2.0738	0.9775	362.3	209.1	-	21N	97E
-0764 Jul 21	22:49:53	21220	532	-34180	36	T	-a	-0.4083	2.0838	1.1334	307.9	194.6	52.6	23S	106E
-0763 Jan 14	23:39:11	21212	532	-34174	41	T-	p-	-0.2480	2.4431	1.3635	364.6	224.3	86.7	22N	97E
-0763 Jul 11	13:48:42	21204	532	-34168	46	T	p-	0.3388	2.2296	1.2431	327.4	206.8	70.7	23S	119W
-0762 Jan 04	05:22:43	21196	532	-34162	51	P	a-	-0.9297	1.1659	0.1386	277.3	84.2	-	23N	10E
-0762 Jun 30	22:44:02	21188	531	-34156	56	N	t-	1.1481	0.7711	-0.2681	245.2	-	-	23S	106E
-0762 Nov 25	07:04:23	21182	531	-34151	23	N	-a	1.1349	0.7617	-0.2106	217.9	-	-	21N	20W
-0762 Dec 24	17:54:20	21180	531	-34150	61	N	a-	-1.5471	0.0097	-0.9712	26.7	-	-	22N	180W
-0761 May 21	10:08:01	21174	531	-34145	28	P	-t	-0.9010	1.2379	0.1723	306.4	100.0	-	19S	66W
-0761 Nov 14	22:26:58	21166	531	-34139	33	P	-a	0.4910	1.9511	0.9631	309.8	186.8	-	17N	109E
-0760 May 09	13:23:02	21158	531	-34133	38	T-	pp	-0.1106	2.6692	1.6411	354.7	226.9	101.4	15S	114W
-0760 Nov 03	09:58:58	21150	530	-34127	43	T-	p-	-0.1983	2.5138	1.4747	346.0	218.4	91.6	13N	64W
-0759 Apr 28	23:41:14	21142	530	-34121	48	P	a-	0.6560	1.6416	0.6667	300.4	166.8	-	11S	92E
-0759 Oct 23	14:23:57	21134	530	-34115	53	P	t-	-0.9247	1.2067	0.1167	302.3	82.1	-	8N	130W
-0758 Mar 20	08:16:40	21127	530	-34110	20	N	-a	-1.1620	0.7006	-0.2492	209.6	-	-	2N	34W
-0758 Apr 18	15:30:50	21126	530	-34109	58	N	a-	1.3558	0.3422	-0.6019	151.6	-	-	6S	144W
-0758 Sep 12	19:59:22	21119	530	-34104	25	N	-t	1.3798	0.3649	-0.7117	179.8	-	-	6S	147E
-0757 Mar 09	23:48:15	21111	530	-34098	30	T	-a	-0.4702	1.9873	1.0030	316.4	192.6	8.3	7N	94E
-0757 Sep 02	01:28:07	21103	529	-34092	35	P	-a	0.6094	1.7502	0.7297	318.4	177.3	-	11S	66E
-0756 Feb 27	09:43:33	21095	529	-34086	40	T	pp	0.2757	2.3738	1.3308	351.3	218.8	82.6	12N	54W
-0756 Aug 21	14:08:24	21088	529	-34080	45	T-	p-	-0.1361	2.5922	1.6241	322.9	211.8	95.5	15S	124W
-0755 Feb 15	12:18:06	21080	529	-34074	50	Nx	t-	1.0265	1.0183	-0.0686	286.0	-	-	16N	92W
-0755 Aug 11	06:36:09	21072	529	-34068	55	P	a-	-0.8387	1.2950	0.3430	267.3	121.7	-	19S	10W
-0754 Jan 05	19:16:52	21065	529	-34063	22	N	-t	-1.2392	0.6185	-0.4494	224.4	-	-	22N	161E
-0754 Jul 02	12:33:33	21057	528	-34057	27	N	-a	1.0304	0.9674	-0.0327	256.6	-	-	23S	101W
-0754 Dec 26	03:03:31	21049	528	-34051	32	P	-p	-0.4895	1.9661	0.9536	320.6	190.9	-	23N	43E

-0753	Jun 21	19:29:13	21041	528	-34045	37	T	-t	0.2871	2.3568	1.3060	359.6	222.7	81.8	23S	154E
-0753	Dec 15	16:52:06	21033	528	-34039	42	T+	p-	0.2022	2.4741	1.4995	318.4	206.9	88.9	23N	166W
-0752	Jun 09	20:39:24	21025	528	-34033	47	P	t-	-0.4811	2.0100	0.9412	356.9	206.8	-	23S	136E
-0752	Dec 04	08:30:56	21017	527	-34027	52	P	a-	0.8673	1.2566	0.2766	268.1	111.0	-	22N	42W
-0751	Apr 30	11:06:31	21011	527	-34022	19	N	-t	1.4862	0.1379	-0.8756	106.9	-	-	11S	80W
-0751	May 29	22:47:23	21009	527	-34021	57	N	t-	-1.2221	0.6351	-0.4036	226.1	-	-	21S	103E
-0751	Oct 25	06:40:19	21003	527	-34016	24	N	-a	-1.2580	0.5774	-0.4775	213.9	-	-	9N	15W
-0750	Apr 19	23:15:40	20995	527	-34010	29	P	-a	0.6722	1.6062	0.6428	293.8	162.4	-	8S	99E
-0750	Oct 14	09:11:20	20987	527	-34004	34	P	-t	-0.6022	1.8019	0.7049	348.2	185.7	-	5N	52W
-0749	Apr 09	15:48:19	20979	527	-33998	39	T-	pp	-0.0722	2.6972	1.7531	317.0	210.9	98.2	4S	149W
-0749	Oct 03	08:26:36	20971	526	-33992	44	T+	pp	0.0896	2.7395	1.6486	374.0	232.9	102.7	1N	41W
-0748	Mar 29	08:11:46	20963	526	-33986	49	P	a-	-0.8149	1.3471	0.3783	278.1	129.9	-	1S	34W
-0748	Sep 21	12:01:01	20955	526	-33980	54	P	a-	0.7870	1.4342	0.3941	304.8	139.2	-	3S	94W
-0747	Feb 17	06:13:30	20949	526	-33975	21	N	-t	1.1777	0.7279	-0.3332	241.7	-	-	16N	1W
-0747	Aug 12	13:48:12	20941	526	-33969	26	N	-a	-1.1719	0.6861	-0.2711	209.0	-	-	19S	119W
-0747	Sep 10	23:02:20	20939	526	-33968	64	N	a-	1.4385	0.2100	-0.7729	123.8	-	-	7S	101E
-0746	Feb 06	07:11:23	20933	525	-33963	31	P	-t	0.4859	2.0135	0.9203	359.6	205.1	-	18N	16W
-0746	Aug 02	06:33:52	20925	525	-33957	36	T	-a	-0.4657	1.9804	1.0262	305.2	189.1	24.1	21S	11W
-0745	Jan 26	07:27:39	20917	525	-33951	41	T-	p-	-0.2261	2.4805	1.4063	363.9	225.2	90.0	20N	21W
-0745	Jul 22	21:08:19	20909	525	-33945	46	T	p-	0.2744	2.3504	1.3584	331.9	211.7	82.6	22S	130E
-0744	Jan 15	13:42:42	20901	525	-33939	51	P	a-	-0.9154	1.1893	0.1676	278.1	91.9	-	22N	116W
-0744	Jul 11	05:30:22	20893	525	-33933	56	N	t-	1.0769	0.9043	-0.1400	263.1	-	-	22S	4E
-0744	Dec 05	15:58:21	20886	524	-33928	23	N	-a	1.1344	0.7622	-0.2095	217.9	-	-	23N	154W
-0743	Jan 04	02:36:35	20885	524	-33927	61	N	a-	-1.5380	0.0247	-0.9528	42.5	-	-	22N	50E
-0743	May 31	16:27:47	20879	524	-33922	28	P	-t	-0.9871	1.0793	0.0149	290.6	30.1	-	22S	162W
-0743	Nov 25	07:15:18	20871	524	-33916	33	P	-a	0.4920	1.9503	0.9600	310.6	187.0	-	20N	24W
-0742	May 20	20:08:02	20863	524	-33910	38	T-	pp	-0.1907	2.5201	1.4961	351.3	223.5	95.0	18S	143E
-0742	Nov 14	18:26:07	20855	524	-33904	43	T-	p-	-0.1967	2.5189	1.4757	347.5	219.0	91.8	16N	168E
-0741	May 10	06:55:37	20847	523	-33898	48	P	a-	0.5814	1.7764	0.8057	306.0	178.7	-	15S	19W
-0741	Nov 03	22:25:34	20839	523	-33892	53	P	t-	-0.9187	1.2194	0.1259	304.3	85.3	-	12N	108E
-0740	Mar 30	16:01:47	20832	523	-33887	20	N	-a	-1.2186	0.5959	-0.3522	195.4	-	-	2S	152W
-0740	Apr 28	23:00:29	20831	523	-33886	58	N	a-	1.2877	0.4660	-0.4759	174.6	-	-	10S	101E
-0740	Sep 23	03:36:49	20825	523	-33881	25	N	-t	1.4054	0.3185	-0.7591	168.4	-	-	2S	31E
-0739	Mar 20	07:28:09	20817	523	-33875	30	P	-a	-0.5243	1.8882	0.9037	313.4	186.7	-	3N	23W
-0739	Sep 12	09:22:41	20809	523	-33869	35	P	-a	0.6393	1.6952	0.6748	314.5	171.5	-	7S	54W
-0738	Mar 09	17:05:54	20801	522	-33863	40	T+	pp	0.2264	2.4642	1.4212	354.2	222.4	90.3	8N	166W
-0738	Sep 01	22:13:33	20793	522	-33857	45	T-	p-	-0.0981	2.6624	1.6933	322.9	212.2	97.3	11S	114E
-0737	Feb 26	19:29:54	20785	522	-33851	50	P	t-	0.9825	1.0978	0.0135	294.6	28.6	-	12N	159E
-0737	Aug 22	14:35:14	20777	522	-33845	55	P	a-	-0.7944	1.3780	0.4224	273.5	133.5	-	16S	131W
-0736	Jan 17	03:17:59	20771	522	-33840	22	N	-t	-1.2508	0.5944	-0.4680	219.6	-	-	21N	40E



-0736	Jul 12	19:40:53	20763	521	-33834	27	N	-a	1.1033	0.8366	-0.1692	243.1	-	-	22S	151E
-0736	Aug 11	05:48:22	20761	521	-33833	65	Nb	a-	-1.5396	0.0258	-0.9599	44.6	-	-	19S	0E
-0735	Jan 05	11:34:22	20755	521	-33828	32	P	-a	-0.4958	1.9520	0.9445	318.8	189.8	-	23N	85W
-0735	Jul 02	02:03:26	20747	521	-33822	37	T	-t	0.3696	2.2077	1.1526	356.9	216.4	61.1	23S	55E
-0735	Dec 26	01:40:55	20739	521	-33816	42	T+	p-	0.1982	2.4803	1.5080	318.0	207.0	89.3	24N	62E
-0734	Jun 21	03:00:09	20731	521	-33810	47	T	t-	-0.3937	2.1705	1.1012	362.8	216.8	51.2	24S	40E
-0734	Dec 15	17:20:50	20723	521	-33804	52	P	a-	0.8670	1.2575	0.2766	268.6	111.2	-	24N	174W
-0733	May 11	18:01:00	20717	520	-33799	19	Ne	-t	1.5563	0.0068	-1.0019	24.0	-	-	14S	175E
-0733	Jun 10	05:25:03	20715	520	-33798	57	N	t-	-1.1366	0.7905	-0.2454	247.5	-	-	23S	3E
-0733	Nov 05	14:58:22	20709	520	-33793	24	N	-a	-1.2669	0.5634	-0.4961	212.4	-	-	13N	141W
-0732	Apr 30	06:37:09	20701	520	-33787	29	P	-a	0.7415	1.4769	0.5175	285.1	148.2	-	11S	14W
-0732	Oct 24	17:03:49	20693	520	-33781	34	P	-t	-0.6162	1.7780	0.6776	347.7	183.1	-	9N	172W
-0731	Apr 19	23:23:19	20685	520	-33775	39	T-	pp	-0.0056	2.8186	1.8762	317.2	211.5	99.4	8S	95E
-0731	Oct 13	16:14:52	20677	519	-33769	44	T+	pp	0.0707	2.7746	1.6828	373.8	232.9	103.3	5N	160W
-0730	Apr 09	15:43:28	20669	519	-33763	49	P	a-	-0.7550	1.4572	0.4880	286.4	145.5	-	5S	149W
-0730	Oct 02	20:04:50	20662	519	-33757	54	P	a-	0.7636	1.4770	0.4373	306.8	145.2	-	1N	143E
-0729	Feb 28	13:37:55	20655	519	-33752	21	N	-t	1.2241	0.6425	-0.4180	229.5	-	-	12N	114W
-0729	Aug 23	21:47:32	20647	519	-33746	26	N	-a	-1.2136	0.6105	-0.3483	198.4	-	-	16S	120E
-0729	Sep 22	07:18:46	20646	519	-33745	64	N	a-	1.4092	0.2640	-0.7193	137.8	-	-	2S	25W
-0728	Feb 17	14:29:53	20639	519	-33740	31	P	-t	0.5256	1.9388	0.8490	356.1	199.7	-	15N	127W
-0728	Aug 12	14:24:41	20631	518	-33734	36	P	-a	-0.5172	1.8880	0.9295	302.4	183.4	-	18S	129W
-0727	Feb 05	15:06:28	20623	518	-33728	41	T-	p-	-0.1955	2.5336	1.4653	363.3	226.3	93.9	18N	136W
-0727	Aug 02	04:34:21	20616	518	-33722	46	T+	pp	0.2162	2.4603	1.4622	335.6	215.4	90.3	20S	18E
-0726	Jan 25	21:55:14	20608	518	-33716	51	P	a-	-0.8940	1.2256	0.2098	279.9	101.9	-	20N	121E
-0726	Jul 22	12:21:42	20600	518	-33710	56	Nx	t-	1.0103	1.0293	-0.0205	278.2	-	-	21S	100W
-0726	Dec 17	00:50:11	20593	518	-33705	23	N	-a	1.1362	0.7584	-0.2122	217.3	-	-	24N	73E
-0725	Jan 15	11:12:56	20592	517	-33704	61	N	a-	-1.5240	0.0485	-0.9252	59.3	-	-	21N	80W
-0725	Jun 11	22:49:07	20585	517	-33699	28	N	-t	-1.0721	0.9229	-0.1406	272.7	-	-	23S	101E
-0725	Dec 06	16:04:08	20578	517	-33693	33	P	-a	0.4923	1.9508	0.9586	311.4	187.3	-	22N	157W
-0724	May 31	02:51:46	20570	517	-33687	38	T	pp	-0.2730	2.3674	1.3469	347.0	218.5	84.0	21S	41E
-0724	Nov 25	02:55:41	20562	517	-33681	43	T-	pp	-0.1978	2.5186	1.4720	348.9	219.5	91.8	19N	40E
-0723	May 20	14:07:43	20554	517	-33675	48	P	a-	0.5037	1.9171	0.9499	310.9	188.6	-	18S	128W
-0723	Nov 14	06:30:31	20546	516	-33669	53	P	t-	-0.9158	1.2262	0.1298	305.7	86.7	-	16N	15W
-0722	Apr 10	23:40:48	20540	516	-33664	20	N	-a	-1.2801	0.4824	-0.4644	177.9	-	-	6S	91E
-0722	May 10	06:27:43	20538	516	-33663	58	N	a-	1.2174	0.5943	-0.3461	194.5	-	-	14S	13W
-0722	Oct 04	11:24:18	20532	516	-33658	25	N	-t	1.4237	0.2852	-0.7930	159.5	-	-	3N	88W
-0722	Nov 03	05:33:26	20530	516	-33657	63	N	t-	-1.5823	0.0061	-1.0959	24.5	-	-	12N	0W
-0721	Mar 31	15:00:59	20524	516	-33652	30	P	-a	-0.5833	1.7801	0.7953	309.6	179.1	-	1S	138W
-0721	Sep 23	17:25:36	20516	516	-33646	35	P	-a	0.6633	1.6512	0.6310	311.0	166.5	-	2S	177W
-0720	Mar 20	00:19:58	20508	516	-33640	40	T+	pp	0.1712	2.5655	1.5225	356.9	225.6	96.7	3N	83E

-0720 Sep 12	06:26:34	20500	515	-33634	45	T-	p-	-0.0665	2.7209	1.7506	322.8	212.3	98.2	7S	12W
-0719 Mar 09	02:31:44	20493	515	-33628	50	P	t-	0.9307	1.1915	0.1099	303.8	80.7	-	8N	51E
-0719 Sep 01	22:42:39	20485	515	-33622	55	P	a-	-0.7574	1.4477	0.4884	278.5	142.2	-	12S	105E
-0718 Jan 27	11:12:17	20478	515	-33617	22	N	-t	-1.2683	0.5594	-0.4971	212.8	-	-	19N	79W
-0718 Jul 24	02:53:32	20470	515	-33611	27	N	-a	1.1707	0.7159	-0.2959	228.7	-	-	21S	42E
-0718 Aug 22	13:33:36	20469	515	-33610	65	N	a-	-1.5001	0.1013	-0.8903	88.3	-	-	16S	117W
-0717 Jan 16	19:59:17	20463	514	-33605	32	P	-a	-0.5076	1.9279	0.9255	316.5	188.1	-	22N	149E
-0717 Jul 13	08:42:35	20455	514	-33599	37	T	-t	0.4470	2.0678	1.0083	353.4	208.6	14.9	23S	46W
-0716 Jan 06	10:24:37	20447	514	-33593	42	T+	p-	0.1899	2.4943	1.5247	317.8	207.3	90.2	24N	69W
-0716 Jul 01	09:24:37	20439	514	-33587	47	T	t-	-0.3091	2.3262	1.2559	367.2	224.2	77.2	24S	57W
-0716 Dec 26	02:06:50	20431	514	-33581	52	P	a-	0.8643	1.2627	0.2816	269.5	112.3	-	25N	54E
-0715 Jun 20	12:06:44	20423	514	-33575	57	N	t-	-1.0533	0.9424	-0.0913	265.0	-	-	24S	98W
-0715 Nov 15	23:18:24	20417	513	-33570	24	N	-a	-1.2733	0.5536	-0.5098	211.5	-	-	16N	93E
-0714 May 11	13:56:42	20409	513	-33564	29	P	-a	0.8129	1.3442	0.3882	275.4	130.6	-	15S	126W
-0714 Nov 05	01:02:09	20401	513	-33558	34	P	-t	-0.6247	1.7638	0.6607	347.5	181.5	-	13N	67E
-0713 May 01	06:53:26	20393	513	-33552	39	T+	pp	0.0651	2.7089	1.7676	317.0	211.2	98.6	12S	20W
-0713 Oct 25	00:11:17	20386	513	-33546	44	T+	pp	0.0580	2.7981	1.7058	373.3	232.7	103.6	9N	79E
-0712 Apr 19	23:07:35	20378	512	-33540	49	P	a-	-0.6895	1.5777	0.6076	294.6	159.8	-	9S	97E
-0712 Oct 13	04:18:08	20370	512	-33534	54	P	a-	0.7468	1.5074	0.4683	307.9	149.1	-	6N	18E
-0711 Mar 10	20:50:54	20363	512	-33529	21	N	-t	1.2789	0.5416	-0.5182	213.3	-	-	8N	136E
-0711 Apr 09	10:11:27	20362	512	-33528	59	N	t-	-1.5044	0.1107	-0.9151	97.1	-	-	6S	68W
-0711 Sep 03	05:56:12	20356	512	-33523	26	N	-a	-1.2482	0.5479	-0.4128	189.0	-	-	12S	3W
-0711 Oct 02	15:44:49	20354	512	-33522	64	N	a-	1.3871	0.3048	-0.6790	147.2	-	-	2N	154W
-0710 Feb 27	21:39:39	20348	512	-33517	31	P	-t	0.5726	1.8508	0.7646	351.4	192.3	-	11N	124E
-0710 Aug 23	22:22:19	20340	512	-33511	36	P	-a	-0.5628	1.8067	0.8437	299.8	177.6	-	15S	110E
-0709 Feb 16	22:39:42	20332	511	-33505	41	T-	pp	-0.1595	2.5967	1.5344	362.6	227.5	97.6	15N	109E
-0709 Aug 13	12:05:41	20324	511	-33499	46	T+	pp	0.1631	2.5609	1.5565	338.8	218.1	95.5	17S	96W
-0708 Feb 06	06:02:07	20317	511	-33493	51	P	a-	-0.8672	1.2716	0.2619	282.4	112.7	-	17N	2W
-0708 Aug 01	19:17:30	20309	511	-33487	56	P	t-	0.9477	1.1472	0.0916	291.3	72.3	-	19S	156E
-0708 Dec 27	09:39:18	20302	511	-33482	23	N	-a	1.1405	0.7498	-0.2193	216.2	-	-	25N	59W
-0707 Jan 25	19:43:31	20301	511	-33481	61	N	a-	-1.5052	0.0810	-0.8887	76.3	-	-	19N	152E
-0707 Jun 22	05:14:30	20294	510	-33476	28	N	-t	-1.1540	0.7725	-0.2906	252.9	-	-	25S	5E
-0707 Dec 17	00:49:13	20287	510	-33470	33	P	-a	0.4954	1.9457	0.9522	312.0	187.2	-	24N	72E
-0706 Jun 11	09:40:37	20279	510	-33464	38	T	-p	-0.3521	2.2207	1.2032	341.8	212.0	67.5	23S	63W
-0706 Dec 06	11:23:13	20271	510	-33458	43	T-	pp	-0.1974	2.5206	1.4712	350.3	220.1	91.9	22N	88W
-0705 May 31	21:21:31	20263	510	-33452	48	T	a-	0.4266	2.0573	1.0930	314.8	196.6	45.3	20S	122E
-0705 Nov 25	14:36:10	20255	510	-33446	53	P	t-	-0.9137	1.2312	0.1328	306.8	87.8	-	19N	137W
-0704 Apr 21	07:13:44	20249	509	-33441	20	N	-a	-1.3465	0.3603	-0.5858	155.7	-	-	10S	25W
-0704 May 20	13:52:50	20248	509	-33440	58	N	a-	1.1448	0.7270	-0.2125	212.2	-	-	17S	126W
-0704 Oct 14	19:20:42	20241	509	-33435	25	N	-t	1.4353	0.2641	-0.8144	153.4	-	-	7N	151E

-0704 Nov 13	13:35:05	20240	509	-33434	63	N	t-	-1.5758	0.0181	-1.0839	42.0	-	-	15N	122W
-0703 Apr 10	22:23:38	20233	509	-33429	30	P	-a	-0.6499	1.6584	0.6726	304.5	168.6	-	6S	109E
-0703 Oct 04	01:39:26	20226	509	-33423	35	P	-a	0.6791	1.6220	0.6022	308.4	162.9	-	2N	57E
-0702 Mar 31	07:23:12	20218	509	-33417	40	T+	pp	0.1080	2.6817	1.6384	359.3	228.3	101.6	1S	25W
-0702 Sep 23	14:48:42	20210	508	-33411	45	T-	p-	-0.0421	2.7664	1.7948	322.5	212.2	98.5	3S	139W
-0701 Mar 20	09:24:05	20202	508	-33405	50	P	t-	0.8710	1.2996	0.2206	313.5	112.6	-	4N	54W
-0701 Sep 13	06:58:02	20194	508	-33399	55	P	a-	-0.7272	1.5051	0.5418	282.6	148.7	-	8S	21W
-0700 Feb 07	18:59:40	20188	508	-33394	22	N	-t	-1.2921	0.5125	-0.5377	203.7	-	-	16N	164E
-0700 Mar 08	09:55:15	20187	508	-33393	60	Nb	t-	1.5727	0.0056	-1.0603	22.8	-	-	9N	61W
-0700 Aug 03	10:10:09	20180	508	-33388	27	N	-a	1.2338	0.6033	-0.4148	213.3	-	-	19S	68W
-0700 Sep 01	21:25:44	20179	508	-33387	65	N	a-	-1.4666	0.1660	-0.8319	112.8	-	-	12S	123E

# 7TH CENTURY BCE

**In the 7th century BCE the total number of lunar eclipses was 253 lunar eclipses: 91 penumbral lunar eclipses, 102 partial lunar eclipses, 60 total lunar eclipses (50 central total lunar eclipses, 10 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
	ECLIPSE														
-0699 Jan 27	04:19:00	20172	508	-33382	32	P	-a	-0.5245	1.8940	0.8972	313.8	185.6	-	20N	23E
-0699 Jul 23	15:26:12	20165	507	-33376	37	P	-t	0.5201	1.9362	0.8718	349.2	199.3	-	21S	147W
-0698 Jan 16	19:03:12	20157	507	-33370	42	T+	p-	0.1770	2.5165	1.5498	317.6	207.7	91.4	22N	162E
-0698 Jul 12	15:55:26	20149	507	-33364	47	T-	pp	-0.2293	2.4734	1.4018	370.3	229.3	91.4	24S	155W
-0697 Jan 06	10:49:16	20141	507	-33358	52	P	a-	0.8590	1.2722	0.2912	270.7	114.2	-	24N	76W
-0697 Jul 01	18:53:24	20133	507	-33352	57	P	t-	-0.9725	1.0897	0.0578	279.6	56.8	-	25S	160E
-0697 Nov 27	07:39:34	20127	506	-33347	24	N	-a	-1.2782	0.5463	-0.5203	211.0	-	-	19N	33W
-0696 May 21	21:15:51	20119	506	-33341	29	P	-a	0.8852	1.2103	0.2570	264.6	108.1	-	18S	123E
-0696 Nov 15	09:02:54	20111	506	-33335	34	P	-t	-0.6313	1.7525	0.6476	347.3	180.2	-	17N	54W

-0695 May 11	14:20:36	20104	506	-33329	39	T+	-p	0.1385	2.5740	1.6332	316.1	209.9	95.4	16S	133W
-0695 Nov 04	08:13:34	20096	506	-33323	44	T+	pp	0.0494	2.8138	1.7218	372.7	232.4	103.6	13N	43W
-0694 May 01	06:27:16	20088	505	-33317	49	P	a-	-0.6207	1.7047	0.7332	302.5	172.5	-	13S	15W
-0694 Oct 24	12:37:41	20080	505	-33311	54	P	a-	0.7343	1.5299	0.4919	308.3	151.8	-	10N	109W
-0693 Mar 22	03:54:23	20074	505	-33306	21	N	-t	1.3404	0.4284	-0.6309	192.2	-	-	4N	28E
-0693 Apr 20	17:09:01	20073	505	-33305	59	N	t-	-1.4390	0.2313	-0.7959	139.4	-	-	10S	175W
-0693 Sep 14	14:13:07	20066	505	-33300	26	N	-a	-1.2768	0.4965	-0.4662	180.7	-	-	8S	129W
-0693 Oct 14	00:18:01	20065	505	-33299	64	N	a-	1.3703	0.3358	-0.6483	153.7	-	-	6N	76E
-0692 Mar 10	04:38:36	20058	505	-33294	31	P	-t	0.6284	1.7466	0.6641	345.4	182.3	-	7N	18E
-0692 Sep 03	06:27:53	20051	505	-33288	36	P	-a	-0.6015	1.7380	0.7703	297.5	172.0	-	11S	13W
-0691 Feb 27	06:03:11	20043	504	-33282	41	T-	pp	-0.1146	2.6759	1.6200	361.7	228.5	100.9	11N	3W
-0691 Aug 23	19:44:47	20035	504	-33276	46	T+	pp	0.1172	2.6485	1.6375	341.5	220.0	98.6	14S	148E
-0690 Feb 16	14:00:16	20027	504	-33270	51	P	a-	-0.8323	1.3325	0.3292	285.8	124.7	-	14N	122W
-0690 Aug 13	02:21:15	20020	504	-33264	56	P	t-	0.8918	1.2527	0.1912	302.1	103.3	-	17S	49E
-0689 Jan 07	18:24:05	20013	504	-33259	23	N	-a	1.1488	0.7336	-0.2337	214.2	-	-	25N	170E
-0689 Feb 06	04:07:10	20012	504	-33258	61	N	a-	-1.4805	0.1241	-0.8415	93.8	-	-	17N	26E
-0689 Jul 03	11:43:29	20005	503	-33253	28	N	-t	-1.2332	0.6271	-0.4359	230.8	-	-	25S	93W
-0689 Dec 28	09:31:58	19998	503	-33247	33	P	-a	0.5002	1.9373	0.9429	312.5	187.1	-	24N	58W
-0688 Jun 21	16:32:01	19990	503	-33241	38	T	-t	-0.4304	2.0758	1.0608	335.8	204.0	38.5	24S	166W
-0688 Dec 16	19:48:45	19982	503	-33235	43	T-	pp	-0.1963	2.5237	1.4722	351.6	220.7	92.2	23N	146E
-0687 Jun 11	04:36:28	19974	503	-33229	48	T	a-	0.3495	2.1977	1.2356	318.0	202.8	68.7	22S	12E
-0687 Dec 05	22:42:15	19967	502	-33223	53	P	t-	-0.9119	1.2350	0.1354	307.6	88.8	-	21N	101E
-0686 May 02	14:42:50	19960	502	-33218	20	N	-a	-1.4155	0.2336	-0.7125	127.0	-	-	14S	139W
-0686 May 31	21:18:01	19959	502	-33217	58	N	a-	1.0722	0.8601	-0.0793	227.7	-	-	20S	122E
-0686 Oct 26	03:23:54	19953	502	-33212	25	N	-t	1.4422	0.2512	-0.8269	149.5	-	-	11N	29E
-0686 Nov 24	21:39:11	19951	502	-33211	63	N	t-	-1.5705	0.0273	-1.0738	51.5	-	-	18N	116E
-0685 Apr 22	05:41:09	19945	502	-33206	30	P	-a	-0.7199	1.5307	0.5435	298.2	155.3	-	10S	3W
-0685 Oct 15	10:00:38	19937	502	-33200	35	P	-a	0.6897	1.6021	0.5829	306.2	160.3	-	6N	70W
-0684 Apr 10	14:17:50	19929	501	-33194	40	T+	pp	0.0385	2.8095	1.7657	361.2	230.2	104.5	5S	131W
-0684 Oct 03	23:18:29	19922	501	-33188	45	T-	pp	-0.0237	2.8007	1.8281	322.2	211.9	98.6	1N	92E
-0683 Mar 30	16:08:08	19914	501	-33182	50	P	t-	0.8044	1.4205	0.3440	323.3	138.1	-	0S	157W
-0683 Sep 23	15:21:02	19906	501	-33176	55	P	a-	-0.7036	1.5504	0.5832	285.8	153.4	-	3S	148W
-0682 Feb 18	02:39:10	19900	501	-33171	22	N	-t	-1.3229	0.4528	-0.5909	191.7	-	-	13N	47E
-0682 Mar 19	16:57:43	19898	501	-33170	60	N	t-	1.5138	0.1107	-0.9495	100.6	-	-	5N	168W
-0682 Aug 14	17:34:33	19892	501	-33165	27	N	-a	1.2895	0.5043	-0.5202	197.9	-	-	16S	180E
-0682 Sep 13	05:26:01	19891	501	-33164	65	N	a-	-1.4401	0.2178	-0.7863	129.2	-	-	8S	1E
-0681 Feb 07	12:31:39	19884	500	-33159	32	P	-a	-0.5478	1.8484	0.8572	310.6	182.3	-	17N	101W
-0681 Aug 03	22:15:59	19877	500	-33153	37	P	-t	0.5873	1.8154	0.7460	344.6	188.8	-	19S	109E
-0680 Jan 28	03:34:50	19869	500	-33147	42	T+	p-	0.1583	2.5491	1.5856	317.6	208.4	92.9	20N	33E
-0680 Jul 22	22:33:37	19861	500	-33141	47	T-	pp	-0.1553	2.6098	1.5367	372.3	232.5	99.6	22S	105E

-0679 Jan 16	19:23:34	19853	500	-33135	52	P	a-	0.8479	1.2925	0.3119	272.7	118.1	-	23N	155E
-0679 Jul 12	01:47:42	19846	499	-33129	57	P	t-	-0.8968	1.2279	0.1973	291.3	102.6	-	24S	55E
-0679 Dec 07	15:59:15	19839	499	-33124	24	N	-a	-1.2833	0.5381	-0.5308	210.3	-	-	21N	158W
-0678 Jun 02	04:35:26	19831	499	-33118	29	P	-a	0.9576	1.0763	0.1250	252.6	76.6	-	20S	12E
-0678 Nov 26	17:05:19	19824	499	-33112	34	P	-t	-0.6363	1.7439	0.6379	347.2	179.3	-	19N	176W
-0677 May 22	21:45:17	19816	499	-33106	39	T+	-p	0.2137	2.4361	1.4951	314.6	207.3	89.4	18S	114E
-0677 Nov 15	16:21:20	19808	498	-33100	44	T+	pp	0.0447	2.8218	1.7308	371.9	232.0	103.6	17N	166W
-0676 May 11	13:39:42	19801	498	-33094	49	P	a-	-0.5467	1.8415	0.8680	310.1	184.0	-	16S	124W
-0676 Nov 03	21:04:41	19793	498	-33088	54	P	a-	0.7271	1.5423	0.5059	308.0	153.2	-	14N	123E
-0675 Apr 01	10:47:43	19787	498	-33083	21	N	-t	1.4089	0.3026	-0.7563	163.8	-	-	0S	77W
-0675 Apr 30	23:58:47	19785	498	-33082	59	N	t-	-1.3682	0.3622	-0.6668	172.9	-	-	14S	81E
-0675 Sep 24	22:38:29	19779	498	-33077	26	N	-a	-1.2988	0.4570	-0.5076	173.9	-	-	3S	102E
-0675 Oct 24	08:58:02	19778	498	-33076	64	N	a-	1.3588	0.3567	-0.6273	157.8	-	-	11N	56W
-0674 Mar 21	11:29:51	19771	498	-33071	31	P	-t	0.6903	1.6312	0.5524	338.0	169.3	-	3N	87W
-0674 Sep 14	14:41:02	19763	497	-33065	36	P	-a	-0.6334	1.6819	0.7095	295.6	167.0	-	7S	138W
-0673 Mar 10	13:21:09	19756	497	-33059	41	T-	pp	-0.0642	2.7651	1.7155	360.7	229.1	103.3	7N	114W
-0673 Sep 04	03:29:26	19748	497	-33053	46	T+	pp	0.0767	2.7261	1.7086	343.8	221.4	100.6	10S	30E
-0672 Feb 27	21:52:49	19740	497	-33047	51	P	a-	-0.7919	1.4035	0.4065	289.6	136.6	-	10N	118E
-0672 Aug 23	09:31:43	19733	497	-33041	56	P	t-	0.8416	1.3478	0.2803	311.3	123.7	-	14S	60W
-0671 Jan 18	03:02:15	19726	496	-33036	23	N	-a	1.1627	0.7070	-0.2582	210.8	-	-	23N	41E
-0671 Feb 16	12:22:36	19725	496	-33035	61	N	a-	-1.4491	0.1796	-0.7818	112.1	-	-	13N	99W
-0671 Jul 13	18:20:03	19719	496	-33030	28	N	-t	-1.3064	0.4928	-0.5705	206.9	-	-	24S	167E
-0671 Aug 12	09:59:19	19717	496	-33029	66	Nb	t-	1.5753	0.0090	-1.0732	29.7	-	-	16S	67W
-0670 Jan 07	18:08:16	19711	496	-33024	33	P	-a	0.5102	1.9193	0.9244	312.6	186.3	-	24N	173E
-0670 Jul 02	23:30:28	19703	496	-33018	38	P	-t	-0.5037	1.9404	0.9274	329.3	194.8	-	24S	89E
-0670 Dec 28	04:08:27	19695	496	-33012	43	T-	pp	-0.1910	2.5343	1.4813	352.9	221.6	93.0	24N	21E
-0669 Jun 22	11:55:45	19688	495	-33006	48	T	p-	0.2750	2.3334	1.3729	320.2	207.3	82.3	23S	98W
-0669 Dec 17	06:45:02	19680	495	-33000	53	P	t-	-0.9078	1.2427	0.1427	308.8	91.2	-	22N	19W
-0668 May 12	22:06:40	19674	495	-32995	20	Ne	-a	-1.4884	0.1000	-0.8466	84.3	-	-	18S	108E
-0668 Jun 11	04:42:40	19672	495	-32994	58	P	a-	0.9990	0.9946	0.0547	241.4	50.6	-	21S	9E
-0668 Nov 05	11:33:51	19666	495	-32989	25	N	-t	1.4444	0.2467	-0.8303	147.8	-	-	15N	95W
-0668 Dec 05	05:44:07	19665	495	-32988	63	N	t-	-1.5654	0.0359	-1.0634	58.9	-	-	20N	5W
-0667 May 02	12:51:02	19658	495	-32983	30	P	-a	-0.7954	1.3931	0.4040	290.3	137.2	-	14S	112W
-0667 Oct 25	18:29:31	19651	494	-32977	35	P	-a	0.6949	1.5920	0.5739	304.7	158.8	-	11N	161E
-0666 Apr 21	21:04:11	19643	494	-32971	40	T-	pp	-0.0372	2.8124	1.7676	362.4	230.8	104.8	9S	125E
-0666 Oct 15	07:56:34	19635	494	-32965	45	T-	pp	-0.0116	2.8234	1.8498	321.8	211.7	98.5	6N	40W
-0665 Apr 10	22:44:01	19628	494	-32959	50	P	t-	0.7311	1.5540	0.4799	332.8	159.8	-	4S	102E
-0665 Oct 04	23:51:26	19620	494	-32953	55	P	a-	-0.6865	1.5838	0.6128	288.3	156.6	-	1N	82E
-0664 Feb 29	10:11:58	19614	494	-32948	22	N	-t	-1.3596	0.3821	-0.6550	176.4	-	-	9N	67W
-0664 Mar 29	23:53:11	19612	494	-32947	60	N	t-	1.4482	0.2283	-0.8263	142.4	-	-	1N	86E

-0664 Aug 25	01:05:16	19606	493	-32942	27	N	-a	1.3388	0.4172	-0.6140	182.4	-	-	12S	66E
-0664 Sep 23	13:33:44	19605	493	-32941	65	N	a-	-1.4204	0.2569	-0.7532	140.4	-	-	4S	122W
-0663 Feb 17	20:36:49	19598	493	-32936	32	P	-a	-0.5779	1.7901	0.8049	306.7	177.8	-	14N	137E
-0663 Aug 14	05:13:21	19591	493	-32930	37	P	-t	0.6474	1.7077	0.6331	339.8	177.6	-	17S	4E
-0662 Feb 07	12:00:17	19583	493	-32924	42	T+	p-	0.1345	2.5911	1.6308	317.6	209.1	94.6	18N	94W
-0662 Aug 03	05:19:18	19575	493	-32918	47	T-	pp	-0.0871	2.7359	1.6611	373.3	234.2	104.0	20S	2E
-0661 Jan 28	03:52:01	19567	492	-32912	52	P	a-	0.8324	1.3205	0.3404	275.3	123.1	-	21N	28E
-0661 Jul 23	08:49:19	19560	492	-32906	57	P	h-	-0.8261	1.3573	0.3276	300.7	129.2	-	23S	50W
-0661 Dec 19	00:16:15	19553	492	-32901	24	N	-h	-1.2901	0.5266	-0.5441	208.9	-	-	22N	78E
-0660 Jun 12	11:56:10	19546	492	-32895	29	N	-a	1.0296	0.9435	-0.0063	239.3	-	-	22S	99W
-0660 Jul 11	19:39:52	19545	492	-32894	67	Nb	a-	-1.5133	0.0678	-0.9053	71.6	-	-	25S	146E
-0660 Dec 07	01:07:08	19538	492	-32889	34	P	-t	-0.6416	1.7344	0.6282	346.8	178.3	-	22N	64E
-0659 Jun 02	05:09:52	19531	491	-32883	39	T	-p	0.2889	2.2986	1.3567	312.4	203.5	79.9	21S	2E
-0659 Nov 26	00:30:02	19523	491	-32877	44	T+	pp	0.0403	2.8289	1.7398	371.0	231.7	103.6	20N	72E
-0658 May 22	20:50:51	19515	491	-32871	49	T	a-	-0.4723	1.9794	1.0031	316.9	193.7	8.6	19S	126E
-0658 Nov 15	05:35:31	19508	491	-32865	54	P	a-	0.7226	1.5495	0.5152	307.4	153.9	-	18N	6W
-0657 Apr 12	17:32:50	19501	491	-32860	21	N	-t	1.4829	0.1668	-0.8920	123.4	-	-	5S	179E
-0657 May 12	06:43:24	19500	491	-32859	59	N	t-	-1.2937	0.5001	-0.5312	201.3	-	-	17S	22W
-0657 Oct 06	07:11:06	19494	491	-32854	26	N	-a	-1.3155	0.4274	-0.5392	168.6	-	-	1N	28W
-0657 Nov 04	17:43:01	19492	490	-32853	64	N	a-	1.3511	0.3707	-0.6129	160.3	-	-	15N	172E
-0656 Mar 31	18:12:19	19486	490	-32848	31	P	-t	0.7593	1.5027	0.4276	328.9	151.9	-	1S	170E
-0656 Sep 24	23:02:16	19478	490	-32842	36	P	-a	-0.6585	1.6382	0.6610	294.2	162.8	-	3S	95E
-0655 Mar 20	20:29:47	19471	490	-32836	41	T-	pp	-0.0051	2.8705	1.8272	359.2	229.0	104.3	3N	136E
-0655 Sep 14	11:23:12	19463	490	-32830	46	T+	pp	0.0444	2.7886	1.7646	345.9	222.3	101.5	6S	90W
-0654 Mar 10	05:37:22	19455	490	-32824	51	P	a-	-0.7437	1.4887	0.4979	293.9	148.7	-	6N	0W
-0654 Sep 03	16:50:04	19448	489	-32818	56	P	t-	0.7982	1.4304	0.3571	318.9	138.3	-	10S	172W
-0653 Jan 29	11:33:58	19441	489	-32813	23	N	-a	1.1822	0.6701	-0.2928	205.9	-	-	21N	88W
-0653 Feb 27	20:30:47	19440	489	-32812	61	N	a-	-1.4116	0.2464	-0.7110	130.3	-	-	10N	137E
-0653 Jul 25	01:03:35	19434	489	-32807	28	N	-t	-1.3746	0.3681	-0.6957	180.6	-	-	23S	66E
-0653 Aug 23	16:59:14	19432	489	-32806	66	N	t-	1.5208	0.1105	-0.9746	102.9	-	-	13S	174W
-0652 Jan 19	02:38:31	19426	489	-32801	33	P	-a	0.5246	1.8929	0.8979	312.3	184.9	-	22N	45E
-0652 Jul 13	06:34:07	19418	489	-32795	38	P	-t	-0.5736	1.8113	0.7998	322.3	184.4	-	24S	18W
-0651 Jan 07	12:23:05	19411	488	-32789	43	T-	pp	-0.1821	2.5510	1.4970	354.3	222.6	94.1	23N	102W
-0651 Jul 02	19:19:11	19403	488	-32783	48	T+	p-	0.2034	2.4643	1.5048	321.7	210.5	90.9	24S	150E
-0651 Dec 27	14:43:51	19396	488	-32777	53	P	t-	-0.9006	1.2557	0.1560	310.3	95.3	-	23N	139W
-0650 Jun 22	12:10:29	19388	488	-32771	58	P	a-	0.9283	1.1249	0.1838	253.2	91.1	-	23S	103W
-0650 Nov 16	19:48:33	19382	488	-32766	25	N	-t	1.4437	0.2470	-0.8283	147.4	-	-	19N	141E
-0650 Dec 16	13:48:55	19380	488	-32765	63	N	t-	-1.5593	0.0459	-1.0510	66.4	-	-	22N	127W
-0649 May 13	19:56:45	19374	488	-32760	30	P	-a	-0.8732	1.2516	0.2600	280.8	112.8	-	17S	139E
-0649 Nov 06	03:03:37	19366	487	-32754	35	P	-a	0.6967	1.5880	0.5713	303.4	158.1	-	15N	32E

-0648	May 02	03:44:38	19359	487	-32748	40	T-	pp	-0.1170	2.6666	1.6205	362.6	230.0	101.9	13S	23E
-0648	Oct 25	16:40:10	19351	487	-32742	45	T-	pp	-0.0040	2.8376	1.8634	321.5	211.4	98.4	10N	172W
-0647	Apr 21	05:13:42	19343	487	-32736	50	P	t-	0.6524	1.6972	0.6252	341.7	178.1	-	9S	2E
-0647	Oct 15	08:28:24	19336	487	-32730	55	P	a-	-0.6751	1.6065	0.6319	290.1	158.8	-	5N	49W
-0646	Mar 11	17:37:27	19329	486	-32725	22	N	-t	-1.4027	0.2997	-0.7308	156.7	-	-	5N	179E
-0646	Apr 10	06:43:44	19328	486	-32724	60	N	t-	1.3776	0.3552	-0.6940	174.9	-	-	4S	19W
-0646	Sep 05	08:42:57	19322	486	-32719	27	N	-a	1.3814	0.3424	-0.6955	167.2	-	-	9S	51W
-0646	Oct 04	21:47:16	19321	486	-32718	65	N	a-	-1.4061	0.2861	-0.7299	148.4	-	-	0N	112E
-0645	Mar 01	04:34:40	19314	486	-32713	32	P	-a	-0.6148	1.7197	0.7401	302.0	172.0	-	10N	16E
-0645	Aug 25	12:18:42	19307	486	-32707	37	P	-t	0.7003	1.6133	0.5336	335.0	165.9	-	13S	104W
-0644	Feb 18	20:16:02	19299	486	-32701	42	T+	p-	0.1025	2.6482	1.6912	317.8	209.9	96.4	14N	141E
-0644	Aug 13	12:14:31	19291	485	-32695	47	T-	pp	-0.0262	2.8486	1.7720	373.5	234.6	105.6	17S	103W
-0643	Feb 07	12:10:25	19284	485	-32689	52	P	a-	0.8093	1.3626	0.3832	278.9	130.1	-	18N	97W
-0643	Aug 02	16:00:43	19276	485	-32683	57	P	h-	-0.7620	1.4745	0.4453	308.2	147.5	-	21S	159W
-0643	Dec 29	08:27:17	19270	485	-32678	24	N	-h	-1.3008	0.5074	-0.5644	206.0	-	-	23N	45W
-0642	Jun 23	19:20:28	19262	485	-32672	29	N	-a	1.0990	0.8158	-0.1333	225.1	-	-	23S	149E
-0642	Jul 23	03:09:23	19261	485	-32671	67	N	a-	-1.4478	0.1877	-0.7849	117.5	-	-	23S	33E
-0642	Dec 18	09:07:37	19255	485	-32666	34	P	-t	-0.6476	1.7230	0.6174	346.3	177.1	-	23N	57W
-0641	Jun 13	12:33:12	19247	484	-32660	39	T	-a	0.3647	2.1602	1.2167	309.4	198.5	65.3	22S	110W
-0641	Dec 07	08:41:28	19239	484	-32654	44	T+	pp	0.0376	2.8327	1.7461	369.9	231.3	103.6	22N	51W
-0640	Jun 02	03:57:58	19232	484	-32648	49	T	p-	-0.3955	2.1219	1.1423	323.1	201.9	55.9	22S	18E
-0640	Nov 25	14:09:49	19224	484	-32642	54	P	a-	0.7200	1.5529	0.5213	306.5	154.2	-	21N	135W
-0639	Apr 23	00:09:47	19218	484	-32637	21	Ne	-t	1.5624	0.0210	-1.0379	44.5	-	-	9S	78E
-0639	May 22	13:23:18	19217	484	-32636	59	N	t-	-1.2157	0.6445	-0.3896	226.3	-	-	20S	123W
-0639	Oct 16	15:51:10	19210	483	-32631	26	N	-a	-1.3266	0.4078	-0.5605	165.0	-	-	5N	160W
-0639	Nov 15	02:32:22	19209	483	-32630	64	N	a-	1.3468	0.3782	-0.6046	161.5	-	-	18N	39E
-0638	Apr 12	00:49:29	19203	483	-32625	31	P	-t	0.8328	1.3661	0.2945	318.0	128.5	-	5S	68E
-0638	Oct 06	07:29:05	19195	483	-32619	36	P	-a	-0.6788	1.6034	0.6216	293.2	159.1	-	2N	34W
-0637	Apr 01	03:34:30	19188	483	-32613	41	T+	pp	0.0583	2.7697	1.7325	357.1	228.1	103.4	1S	28E
-0637	Sep 25	19:22:46	19180	483	-32607	46	T+	pp	0.0176	2.8410	1.8106	347.8	223.0	101.9	2S	148E
-0636	Mar 20	13:15:16	19172	482	-32601	51	P	a-	-0.6892	1.5857	0.6009	298.5	160.2	-	2N	117W
-0636	Sep 14	00:16:20	19165	482	-32595	56	P	t-	0.7615	1.5005	0.4216	325.1	149.1	-	6S	75E
-0635	Feb 08	19:57:36	19159	482	-32590	23	N	-a	1.2084	0.6210	-0.3396	199.2	-	-	18N	146E
-0635	Mar 10	04:31:03	19157	482	-32589	61	N	a-	-1.3677	0.3251	-0.6285	148.3	-	-	6N	15E
-0635	Aug 04	07:57:00	19151	482	-32584	28	N	-t	-1.4350	0.2575	-0.8070	152.3	-	-	21S	38W
-0635	Sep 03	00:09:32	19150	482	-32583	66	N	t-	1.4740	0.1978	-0.8900	136.7	-	-	9S	77E
-0634	Jan 29	10:59:34	19143	482	-32578	33	P	-a	0.5462	1.8532	0.8582	311.5	182.6	-	20N	81W
-0634	Jul 24	13:47:31	19136	482	-32572	38	P	-t	-0.6365	1.6954	0.6850	315.2	173.4	-	22S	127W
-0633	Jan 18	20:29:27	19128	481	-32566	43	T-	pp	-0.1671	2.5788	1.5244	355.8	223.8	95.8	22N	136E
-0633	Jul 14	02:48:09	19121	481	-32560	48	T+	p-	0.1357	2.5883	1.6292	322.4	212.4	96.1	23S	37E

-0632	Jan 07	22:36:43	19113	481	-32554	53	P	t-	-0.8887	1.2770	0.1784	312.4	101.7	-	23N	103E
-0632	Jul 02	19:40:57	19105	481	-32548	58	P	a-	0.8596	1.2520	0.3090	263.6	116.1	-	23S	144E
-0632	Nov 27	04:05:25	19099	481	-32543	25	N	-t	1.4419	0.2491	-0.8237	147.6	-	-	22N	16E
-0632	Dec 26	21:49:27	19098	481	-32542	63	N	t-	-1.5492	0.0626	-1.0308	77.3	-	-	22N	113E
-0631	May 24	02:57:51	19092	480	-32537	30	P	-a	-0.9538	1.1053	0.1106	269.3	75.4	-	20S	33E
-0631	Nov 16	11:42:43	19084	480	-32531	35	P	-a	0.6954	1.5895	0.5749	302.5	158.1	-	18N	99W
-0630	May 13	10:19:29	19076	480	-32525	40	T-	pp	-0.2004	2.5144	1.4665	361.8	227.5	94.8	17S	77W
-0630	Nov 06	01:28:46	19069	480	-32519	45	T-	pp	-0.0003	2.8446	1.8701	321.2	211.1	98.3	14N	54E
-0629	May 02	11:37:56	19061	480	-32513	50	P	t-	0.5690	1.8493	0.7792	349.7	193.7	-	12S	96W
-0629	Oct 26	17:11:10	19054	479	-32507	55	P	a-	-0.6690	1.6194	0.6415	291.5	159.9	-	10N	179E
-0628	Mar 22	00:55:19	19047	479	-32502	22	N	-t	-1.4525	0.2050	-0.8189	130.1	-	-	1N	68E
-0628	Apr 20	13:28:00	19046	479	-32501	60	N	t-	1.3006	0.4937	-0.5503	202.7	-	-	8S	123W
-0628	Sep 15	16:28:14	19040	479	-32496	27	N	-a	1.4169	0.2807	-0.7638	152.9	-	-	4S	169W
-0628	Oct 15	06:07:49	19039	479	-32495	65	N	a-	-1.3982	0.3035	-0.7181	153.2	-	-	5N	15W
-0627	Mar 11	12:25:26	19032	479	-32490	32	P	-a	-0.6581	1.6373	0.6633	296.6	164.5	-	6N	104W
-0627	Sep 04	19:32:23	19025	479	-32484	37	P	-t	0.7459	1.5322	0.4474	330.6	154.3	-	9S	146E
-0626	Mar 01	04:25:04	19017	479	-32478	42	T+	pp	0.0648	2.7159	1.7619	317.9	210.7	97.9	10N	17E
-0626	Aug 24	19:19:31	19010	478	-32472	47	T+	pp	0.0272	2.8476	1.7691	373.2	234.2	105.3	14S	150E
-0625	Feb 18	20:21:53	19002	478	-32466	52	P	a-	0.7813	1.4138	0.4351	283.0	137.9	-	15N	138E
-0625	Aug 13	23:20:25	18995	478	-32460	57	P	h-	-0.7039	1.5810	0.5522	314.0	161.0	-	18S	90E
-0624	Jan 09	16:33:02	18988	478	-32455	24	N	-h	-1.3149	0.4818	-0.5905	201.8	-	-	22N	166W
-0624	Feb 08	07:39:24	18987	478	-32454	62	N	h-	1.5552	0.0222	-1.0131	43.5	-	-	19N	31W
-0624	Jul 04	02:48:58	18981	478	-32449	29	N	-a	1.1650	0.6946	-0.2544	209.9	-	-	23S	36E
-0624	Aug 02	10:46:38	18979	478	-32448	67	N	a-	-1.3881	0.2972	-0.6753	145.9	-	-	21S	82W
-0624	Dec 28	17:02:40	18973	477	-32443	34	P	-t	-0.6577	1.7038	0.5996	345.1	175.1	-	23N	175W
-0623	Jun 23	19:59:40	18966	477	-32437	39	T	-a	0.4376	2.0277	1.0819	306.0	192.2	41.9	23S	138E
-0623	Dec 17	16:50:37	18958	477	-32431	44	T+	pp	0.0329	2.8396	1.7564	368.7	230.9	103.6	23N	174W
-0622	Jun 13	11:05:51	18951	477	-32425	49	T	p-	-0.3202	2.2621	1.2787	328.4	208.6	75.0	23S	89W
-0622	Dec 06	22:43:51	18943	477	-32419	54	P	a-	0.7167	1.5571	0.5289	305.6	154.7	-	23N	97E
-0621	Jun 02	20:01:14	18935	477	-32413	59	N	t-	-1.1370	0.7905	-0.2467	248.0	-	-	22S	136E
-0621	Oct 28	00:36:41	18929	476	-32408	26	N	-a	-1.3338	0.3955	-0.5742	162.6	-	-	10N	67E
-0621	Nov 26	11:23:16	18928	476	-32407	64	N	a-	1.3436	0.3833	-0.5981	162.2	-	-	21N	95W
-0620	Apr 22	07:18:43	18922	476	-32402	31	P	-t	0.9125	1.2181	0.1497	304.7	93.5	-	9S	31W
-0620	Oct 16	16:03:20	18914	476	-32396	36	P	-a	-0.6924	1.5806	0.5944	292.8	156.6	-	6N	164W
-0619	Apr 11	10:32:10	18907	476	-32390	41	T+	pp	0.1282	2.6385	1.6071	354.4	226.1	100.1	5S	79W
-0619	Oct 06	03:30:03	18899	476	-32384	46	T-	pp	-0.0018	2.8730	1.8366	349.5	223.6	102.1	2N	24E
-0618	Mar 31	20:46:48	18892	475	-32378	51	P	a-	-0.6287	1.6938	0.7147	303.1	171.1	-	2S	128E
-0618	Sep 25	07:51:41	18884	475	-32372	56	P	t-	0.7330	1.5555	0.4712	330.0	156.7	-	1S	41W
-0617	Feb 20	04:13:36	18878	475	-32367	23	N	-a	1.2408	0.5603	-0.3979	190.4	-	-	15N	20E
-0617	Mar 21	12:23:54	18876	475	-32366	61	N	a-	-1.3177	0.4150	-0.5350	165.9	-	-	2N	105W



-0617 Aug 15	14:58:52	18870	475	-32361	28	N	-t	-1.4891	0.1588	-0.9067	120.4	-	-	18S	145W
-0617 Sep 14	07:29:16	18869	475	-32360	66	N	t-	1.4341	0.2724	-0.8182	159.3	-	-	5S	35W
-0616 Feb 09	19:13:01	18863	475	-32355	33	P	-a	0.5735	1.8031	0.8083	310.1	179.2	-	17N	155E
-0616 Aug 03	21:08:53	18855	474	-32349	38	P	-h	-0.6938	1.5899	0.5802	308.1	161.8	-	20S	122E
-0615 Jan 29	04:27:05	18848	474	-32343	43	T-	pp	-0.1457	2.6182	1.5637	357.3	225.3	97.8	20N	16E
-0615 Jul 24	10:23:54	18840	474	-32337	48	T+	pp	0.0731	2.7033	1.7440	322.6	213.2	98.8	22S	77W
-0614 Jan 18	06:23:12	18833	474	-32331	53	P	t-	-0.8716	1.3075	0.2106	315.2	110.0	-	21N	14W
-0614 Jul 14	03:15:18	18825	474	-32325	58	P	a-	0.7943	1.3730	0.4276	272.5	134.3	-	22S	29E
-0614 Dec 08	12:23:10	18819	474	-32320	25	N	-t	1.4400	0.2510	-0.8186	147.6	-	-	24N	109W
-0613 Jan 07	05:46:43	18818	474	-32319	63	N	t-	-1.5359	0.0850	-1.0045	89.6	-	-	22N	6W
-0613 Jun 04	09:57:14	18811	473	-32314	30	N	-a	-1.0346	0.9588	-0.0395	255.9	-	-	22S	73W
-0613 Nov 27	20:23:32	18804	473	-32308	35	P	-a	0.6930	1.5924	0.5804	301.7	158.3	-	21N	130E
-0612 May 23	16:49:54	18796	473	-32302	40	T	-t	-0.2865	2.3575	1.3075	359.9	222.9	82.1	19S	176W
-0612 Nov 16	10:20:10	18789	473	-32296	45	T+	pp	0.0012	2.8427	1.8684	320.8	210.9	98.2	18N	79W
-0611 May 12	17:59:29	18781	473	-32290	50	P	t-	0.4831	2.0062	0.9375	356.7	206.5	-	16S	167E
-0611 Nov 06	01:56:53	18774	472	-32284	55	P	a-	-0.6657	1.6268	0.6460	292.5	160.6	-	14N	46E
-0610 Apr 02	08:07:54	18768	472	-32279	22	N	-t	-1.5070	0.1018	-0.9160	92.1	-	-	3S	43W
-0610 May 01	20:10:41	18766	472	-32278	60	N	t-	1.2211	0.6372	-0.4021	226.2	-	-	12S	135E
-0610 Sep 27	00:20:57	18760	472	-32273	27	N	-a	1.4455	0.2313	-0.8195	140.0	-	-	0S	71E
-0610 Oct 26	14:32:58	18759	472	-32272	65	N	a-	-1.3945	0.3128	-0.7139	156.1	-	-	9N	143W
-0609 Mar 22	20:08:56	18753	472	-32267	32	P	-a	-0.7081	1.5430	0.5743	290.2	154.9	-	1N	138E
-0609 Sep 16	02:54:35	18745	472	-32261	37	P	-t	0.7839	1.4649	0.3754	326.6	143.1	-	5S	34E
-0608 Mar 11	12:24:55	18737	472	-32255	42	T+	pp	0.0194	2.7977	1.8465	317.9	211.2	98.9	6N	105W
-0608 Sep 04	02:35:40	18730	471	-32249	47	T+	pp	0.0717	2.7669	1.6866	372.5	233.3	103.9	10S	39E
-0607 Mar 01	04:21:46	18723	471	-32243	52	P	a-	0.7445	1.4809	0.5028	288.1	147.1	-	11N	17E
-0607 Aug 24	06:51:48	18715	471	-32237	57	P	a-	-0.6545	1.6715	0.6428	318.3	170.6	-	14S	24W
-0606 Jan 20	00:30:27	18709	471	-32232	24	N	-t	-1.3345	0.4459	-0.6264	195.3	-	-	20N	74E
-0606 Feb 18	15:26:54	18708	471	-32231	62	N	t-	1.5280	0.0722	-0.9631	78.5	-	-	15N	149W
-0606 Jul 15	10:22:12	18701	471	-32226	29	N	-a	1.2274	0.5804	-0.3690	193.8	-	-	22S	78W
-0606 Aug 13	18:31:45	18700	471	-32225	67	N	a-	-1.3342	0.3962	-0.5765	166.5	-	-	18S	161E
-0605 Jan 09	00:53:19	18694	470	-32220	34	P	-t	-0.6710	1.6782	0.5762	343.4	172.4	-	23N	67E
-0605 Jul 05	03:27:37	18686	470	-32214	39	P	-a	0.5085	1.8991	0.9505	302.0	184.7	-	23S	25E
-0605 Dec 29	00:58:09	18679	470	-32208	44	T+	pp	0.0259	2.8503	1.7711	367.4	230.5	103.6	24N	65E
-0604 Jun 23	18:12:08	18671	470	-32202	49	T-	pp	-0.2444	2.4035	1.4156	333.0	213.9	87.3	24S	163E
-0604 Dec 17	07:18:13	18664	470	-32196	54	P	a-	0.7130	1.5619	0.5377	304.7	155.3	-	24N	32W
-0603 Jun 13	02:38:05	18656	469	-32190	59	N	t-	-1.0577	0.9380	-0.1030	267.1	-	-	24S	36E
-0603 Nov 07	09:26:17	18650	469	-32185	26	N	-a	-1.3379	0.3885	-0.5823	161.3	-	-	13N	66W
-0603 Dec 06	20:14:24	18649	469	-32184	64	N	a-	1.3406	0.3880	-0.5917	162.8	-	-	23N	132E
-0602 May 03	13:46:00	18643	469	-32179	31	P	-t	0.9938	1.0675	0.0020	289.3	11.1	-	13S	130W
-0602 Oct 28	00:42:07	18635	469	-32173	36	P	-a	-0.7017	1.5655	0.5753	292.8	154.8	-	10N	65E

-0601 Apr 22	17:27:00	18628	469	-32167	41	T+	pp	0.2015	2.5013	1.4755	350.8	222.7	93.6	9S	175E
-0601 Oct 17	11:42:30	18620	469	-32161	46	T-	pp	-0.0162	2.8494	1.8074	351.2	224.1	102.0	7N	101W
-0600 Apr 11	04:13:43	18613	468	-32155	51	P	a-	-0.5636	1.8106	0.8367	307.4	180.9	-	6S	14E
-0600 Oct 05	15:34:16	18605	468	-32149	56	P	t-	0.7105	1.5994	0.5102	333.9	162.3	-	3N	158W

# 6TH CENTURY BCE

In the 6th century BCE the total number of lunar eclipses was 255 lunar eclipses: 95 penumbral lunar eclipses, 100 partial lunar eclipses, 60 total lunar eclipses (49 central total lunar eclipses, 11 non-central total lunar eclipses).

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-0599 Mar 02	12:20:06	18599	468	-32144	23	N	-a	1.2810	0.4855	-0.4707	178.6	-	-	11N	103W
-0599 Mar 31	20:09:28	18598	468	-32143	61	N	a-	-1.2615	0.5165	-0.4304	183.0	-	-	3S	136E
-0599 Aug 25	22:12:22	18592	468	-32138	28	N	-t	-1.5346	0.0758	-0.9905	83.6	-	-	15S	105E
-0599 Sep 24	14:59:32	18590	468	-32137	66	N	t-	1.4018	0.3327	-0.7601	175.0	-	-	1S	149W
-0598 Feb 20	03:16:34	18584	468	-32132	33	P	-a	0.6086	1.7386	0.7439	307.9	174.3	-	14N	33E
-0598 Aug 15	04:39:43	18577	467	-32126	38	P	-h	-0.7443	1.4970	0.4877	301.2	150.0	-	17S	8E
-0597 Feb 09	12:14:32	18569	467	-32120	43	T-	pp	-0.1165	2.6717	1.6173	358.9	226.8	100.2	17N	102W
-0597 Aug 04	18:06:57	18562	467	-32114	48	T+	pp	0.0159	2.8085	1.8486	322.4	213.3	99.7	19S	166E
-0596 Jan 29	13:59:33	18554	467	-32108	53	P	t-	-0.8466	1.3524	0.2578	319.0	121.0	-	19N	129W
-0596 Jul 24	10:54:42	18547	467	-32102	58	P	a-	0.7334	1.4863	0.5379	280.2	148.2	-	21S	86W
-0596 Dec 18	20:39:36	18541	467	-32097	25	N	-t	1.4398	0.2492	-0.8164	146.6	-	-	25N	128E
-0595 Jan 17	13:37:00	18539	467	-32096	63	N	t-	-1.5163	0.1186	-0.9662	105.2	-	-	21N	124W
-0595 Jun 14	16:55:21	18533	466	-32091	30	N	-a	-1.1152	0.8131	-0.1895	240.3	-	-	24S	178W
-0595 Jul 14	02:23:45	18532	466	-32090	68	N	a-	1.4983	0.0986	-0.8811	86.8	-	-	22S	41E
-0595 Dec 08	05:04:35	18526	466	-32085	35	P	-a	0.6914	1.5939	0.5850	300.7	158.4	-	23N	0W
-0594 Jun 03	23:18:37	18518	466	-32079	40	T	-t	-0.3733	2.1997	1.1470	356.7	216.3	60.1	22S	85E

-0594	Nov 27	19:14:14	18511	466	-32073	45	T+	pp	0.0010	2.8430	1.8692	320.5	210.8	98.1	20N	146E
-0593	May 24	00:17:29	18503	466	-32067	50	T	t-	0.3939	2.1693	1.1018	362.5	216.8	51.4	19S	71E
-0593	Nov 17	10:46:34	18496	465	-32061	55	P	a-	-0.6662	1.6272	0.6440	293.2	160.6	-	17N	87W
-0592	May 12	02:50:24	18488	465	-32055	60	N	t-	1.1377	0.7881	-0.2469	246.8	-	-	15S	33E
-0592	Oct 07	08:20:48	18482	465	-32050	27	N	-a	1.4674	0.1941	-0.8626	129.3	-	-	4N	51W
-0592	Nov 05	23:02:26	18481	465	-32049	65	N	a-	-1.3951	0.3140	-0.7172	157.0	-	-	13N	89E
-0591	Apr 02	03:46:19	18475	465	-32044	32	P	-a	-0.7636	1.4386	0.4749	282.7	142.8	-	3S	22E
-0591	Sep 26	10:25:45	18467	465	-32038	37	P	-t	0.8141	1.4117	0.3177	323.3	132.9	-	1S	81W
-0590	Mar 22	20:18:48	18460	465	-32032	42	T-	pp	-0.0308	2.7755	1.8269	317.7	211.2	98.9	2N	135E
-0590	Sep 15	10:00:26	18452	464	-32026	47	T+	pp	0.1095	2.6983	1.6164	371.5	232.0	101.8	6S	74W
-0589	Mar 12	12:14:36	18445	464	-32020	52	P	a-	0.7026	1.5576	0.5798	293.5	156.5	-	7N	103W
-0589	Sep 04	14:32:25	18438	464	-32014	57	P	a-	-0.6120	1.7495	0.7209	321.4	177.8	-	11S	141W
-0588	Jan 31	08:18:37	18431	464	-32009	24	N	-t	-1.3608	0.3974	-0.6744	185.6	-	-	18N	44W
-0588	Feb 29	23:03:46	18430	464	-32008	62	N	t-	1.4931	0.1362	-0.8991	107.5	-	-	11N	95E
-0588	Jul 25	18:01:53	18424	464	-32003	29	N	-a	1.2848	0.4756	-0.4749	177.0	-	-	20S	167E
-0588	Aug 24	02:26:09	18423	464	-32002	67	N	a-	-1.2873	0.4826	-0.4908	181.8	-	-	15S	41E
-0587	Jan 19	08:35:49	18416	463	-31997	34	P	-t	-0.6909	1.6403	0.5411	340.8	168.0	-	21N	49W
-0587	Jul 15	11:01:00	18409	463	-31991	39	P	-a	0.5746	1.7795	0.8274	297.6	176.3	-	22S	89W
-0586	Jan 08	08:59:35	18402	463	-31985	44	T+	pp	0.0135	2.8708	1.7963	366.0	230.2	103.7	23N	56W
-0586	Jul 05	01:22:24	18394	463	-31979	49	T-	pp	-0.1728	2.5373	1.5444	336.8	217.7	95.1	24S	55E
-0586	Dec 28	15:49:31	18387	463	-31973	54	P	a-	0.7063	1.5721	0.5523	304.1	156.6	-	24N	160W
-0585	Jun 24	09:14:45	18379	463	-31967	59	P	t-	-0.9789	1.0847	0.0396	283.9	47.8	-	25S	64W
-0585	Nov 18	18:19:07	18373	462	-31962	26	N	-a	-1.3396	0.3856	-0.5859	160.7	-	-	17N	160E
-0585	Dec 18	05:04:19	18372	462	-31961	64	N	a-	1.3366	0.3941	-0.5833	163.7	-	-	25N	0E
-0584	May 13	20:08:55	18366	462	-31956	31	N	-t	1.0782	0.9114	-0.1516	271.2	-	-	16S	133E
-0584	Nov 07	09:25:28	18358	462	-31950	36	P	-a	-0.7069	1.5577	0.5640	293.2	153.9	-	14N	68W
-0583	May 03	00:17:39	18351	462	-31944	41	T	pp	0.2790	2.3567	1.3358	346.4	217.8	82.9	13S	71E
-0583	Oct 27	20:01:17	18343	462	-31938	46	T-	pp	-0.0243	2.8371	1.7899	352.8	224.5	102.0	11N	133E
-0582	Apr 22	11:35:50	18336	461	-31932	51	P	a-	-0.4937	1.9366	0.9675	311.5	189.6	-	10S	98W
-0582	Oct 16	23:23:28	18329	461	-31926	56	P	t-	0.6938	1.6322	0.5387	336.9	166.3	-	7N	83E
-0581	Mar 13	20:19:05	18322	461	-31921	23	N	-a	1.3273	0.3996	-0.5546	163.5	-	-	7N	135E
-0581	Apr 12	03:49:02	18321	461	-31920	61	N	a-	-1.2005	0.6272	-0.3171	199.3	-	-	7S	19E
-0581	Sep 06	05:35:27	18315	461	-31915	28	Ne	-t	-1.5730	0.0058	-1.0615	23.3	-	-	11S	7W
-0581	Oct 05	22:38:52	18314	461	-31914	66	N	t-	1.3762	0.3806	-0.7141	186.2	-	-	3N	94E
-0580	Mar 02	11:10:04	18308	461	-31909	33	P	-a	0.6512	1.6604	0.6659	304.7	167.6	-	10N	87W
-0580	Aug 25	12:20:00	18300	461	-31903	38	P	-a	-0.7878	1.4171	0.4080	294.8	138.4	-	14S	108W
-0579	Feb 19	19:52:11	18293	460	-31897	43	T-	pp	-0.0801	2.7382	1.6842	360.4	228.3	102.3	13N	143E
-0579	Aug 15	01:57:47	18285	460	-31891	48	T-	pp	-0.0350	2.7741	1.8132	321.8	212.8	99.2	17S	47E
-0578	Feb 08	21:28:01	18278	460	-31885	53	P	t-	-0.8152	1.4086	0.3166	323.5	133.0	-	16N	119E
-0578	Aug 04	18:40:20	18271	460	-31879	58	P	a-	0.6779	1.5898	0.6380	286.6	159.0	-	19S	156E

-0578	Dec 30	04:54:12	18264	460	-31874	25	N	-t	1.4418	0.2433	-0.8178	144.4	-	-	25N	4E
-0577	Jan 28	21:22:00	18263	460	-31873	63	N	t-	-1.4918	0.1609	-0.9188	121.7	-	-	19N	119E
-0577	Jun 25	23:53:14	18257	459	-31868	30	N	-a	-1.1947	0.6697	-0.3377	222.3	-	-	25S	77E
-0577	Jul 25	09:47:12	18256	459	-31867	68	N	a-	1.4412	0.2062	-0.7790	124.8	-	-	20S	71W
-0577	Dec 19	13:44:53	18250	459	-31862	35	P	-a	0.6910	1.5927	0.5874	299.6	158.2	-	24N	130W
-0576	Jun 14	05:46:48	18242	459	-31856	40	P	-t	-0.4597	2.0426	0.9869	352.3	207.4	-	23S	12W
-0576	Dec 08	04:06:54	18235	459	-31850	45	T+	pp	0.0019	2.8407	1.8679	320.2	210.7	98.1	22N	13E
-0575	Jun 03	06:36:51	18227	459	-31844	50	T	tp	0.3054	2.3313	1.2645	366.9	224.6	78.3	21S	25W
-0575	Nov 27	19:36:25	18220	459	-31838	55	P	a-	-0.6670	1.6268	0.6415	293.8	160.6	-	20N	140E
-0574	May 23	09:31:05	18213	458	-31832	60	N	t-	1.0539	0.9400	-0.0911	264.3	-	-	18S	69W
-0574	Oct 18	16:25:33	18206	458	-31827	27	N	-a	1.4845	0.1655	-0.8967	120.2	-	-	9N	174W
-0574	Nov 17	07:33:04	18205	458	-31826	65	N	a-	-1.3973	0.3120	-0.7232	157.1	-	-	16N	40W
-0573	Apr 13	11:18:26	18199	458	-31821	32	P	-a	-0.8241	1.3254	0.3662	274.0	127.2	-	7S	94W
-0573	Oct 07	18:05:03	18192	458	-31815	37	P	-t	0.8371	1.3714	0.2734	320.7	124.3	-	4N	162E
-0572	Apr 02	04:03:09	18184	458	-31809	42	T-	pp	-0.0889	2.6679	1.7214	317.2	210.7	97.6	2S	16E
-0572	Sep 25	17:36:50	18177	457	-31803	47	T+	pp	0.1382	2.6463	1.5631	370.4	230.7	99.5	1S	170E
-0571	Mar 22	19:56:44	18170	457	-31797	52	P	a-	0.6527	1.6492	0.6715	299.5	166.4	-	2N	139E
-0571	Sep 14	22:24:11	18162	457	-31791	57	P	a-	-0.5777	1.8124	0.7839	323.5	182.8	-	6S	99E
-0570	Feb 10	15:56:39	18156	457	-31786	24	N	-t	-1.3943	0.3356	-0.7355	171.9	-	-	15N	159W
-0570	Mar 12	06:30:05	18155	457	-31785	62	N	t-	1.4507	0.2141	-0.8212	134.3	-	-	7N	18W
-0570	Aug 06	01:48:51	18149	457	-31780	29	N	-a	1.3365	0.3815	-0.5705	159.9	-	-	18S	49E
-0570	Sep 04	10:29:52	18147	457	-31779	67	N	a-	-1.2475	0.5559	-0.4182	193.4	-	-	11S	81W
-0569	Jan 30	16:11:39	18141	457	-31774	34	P	-t	-0.7160	1.5925	0.4967	337.3	162.1	-	19N	163W
-0569	Jul 26	18:37:35	18134	456	-31768	39	P	-a	0.6373	1.6665	0.7104	292.9	166.9	-	21S	157E
-0568	Jan 19	16:57:31	18126	456	-31762	44	T-	pp	-0.0025	2.8882	1.8192	364.5	229.8	103.8	22N	175W
-0568	Jul 15	08:34:23	18119	456	-31756	49	T-	pp	-0.1039	2.6666	1.6681	339.8	220.4	99.8	23S	53W
-0567	Jan 08	00:17:02	18112	456	-31750	54	P	a-	0.6959	1.5885	0.5738	303.8	158.6	-	24N	74E
-0567	Jul 04	15:53:53	18104	456	-31744	59	P	t-	-0.9027	1.2268	0.1771	298.5	99.4	-	25S	164W
-0567	Nov 29	03:13:32	18098	455	-31739	26	N	-a	-1.3400	0.3851	-0.5866	160.7	-	-	19N	26E
-0567	Dec 28	13:51:59	18097	455	-31738	64	N	a-	1.3312	0.4026	-0.5721	165.0	-	-	25N	131W
-0566	May 25	02:32:11	18091	455	-31733	31	N	-t	1.1624	0.7559	-0.3049	250.3	-	-	18S	36E
-0566	Nov 18	18:10:10	18083	455	-31727	36	P	-a	-0.7105	1.5528	0.5559	293.8	153.3	-	17N	160E
-0565	May 14	07:08:06	18076	455	-31721	41	T	-p	0.3574	2.2104	1.1942	341.0	211.4	66.1	16S	33W
-0565	Nov 08	04:22:25	18069	455	-31715	46	T-	pp	-0.0299	2.8291	1.7774	354.3	225.0	102.0	15N	7E
-0564	May 02	18:54:37	18061	455	-31709	51	T	a-	-0.4200	2.0695	1.1047	315.0	197.0	47.8	14S	150E
-0564	Oct 27	07:18:18	18054	454	-31703	56	P	t-	0.6819	1.6558	0.5586	339.2	169.0	-	12N	38W
-0563	Mar 24	04:09:40	18048	454	-31698	23	N	-a	1.3801	0.3018	-0.6509	143.6	-	-	3N	16E
-0563	Apr 22	11:23:44	18047	454	-31697	61	N	a-	-1.1353	0.7457	-0.1965	214.6	-	-	11S	97W
-0563	Oct 16	06:25:43	18039	454	-31691	66	N	t-	1.3562	0.4180	-0.6780	194.3	-	-	8N	24W
-0562	Mar 13	18:53:46	18033	454	-31686	33	P	-a	0.7011	1.5689	0.5742	300.5	158.5	-	6N	155E

-0562	Sep 05	20:10:55	18026	454	-31680	38	P	-a	-0.8233	1.3520	0.3429	289.2	127.7	-	10S	133E
-0561	Mar 03	03:18:23	18018	453	-31674	43	T-	pp	-0.0351	2.8206	1.7670	361.8	229.6	104.0	9N	29E
-0561	Aug 26	09:56:59	18011	453	-31668	48	T-	pp	-0.0792	2.6935	1.7313	321.0	211.8	97.9	13S	74W
-0560	Feb 20	04:45:34	18004	453	-31662	53	P	t-	-0.7750	1.4809	0.3919	328.8	146.3	-	13N	8E
-0560	Aug 15	02:33:13	17996	453	-31656	58	P	a-	0.6287	1.6821	0.7264	292.0	167.3	-	16S	37E
-0559	Jan 09	13:03:09	17990	453	-31651	25	N	-t	1.4490	0.2274	-0.8284	139.2	-	-	24N	118W
-0559	Feb 08	04:57:22	17989	453	-31650	63	N	t-	-1.4588	0.2186	-0.8554	140.6	-	-	16N	5E
-0559	Jul 06	06:53:28	17983	453	-31645	30	N	-h	-1.2710	0.5323	-0.4804	201.8	-	-	25S	29W
-0559	Aug 04	17:16:59	17982	453	-31644	68	N	h-	1.3896	0.3038	-0.6873	150.8	-	-	18S	176E
-0559	Dec 29	22:22:43	17976	452	-31639	35	P	-a	0.6937	1.5857	0.5847	298.1	157.5	-	24N	101E
-0558	Jun 25	12:15:20	17968	452	-31633	40	P	-t	-0.5450	1.8878	0.8287	346.8	196.0	-	24S	110W
-0558	Dec 19	12:58:59	17961	452	-31627	45	T+	pp	0.0036	2.8369	1.8656	319.9	210.6	98.1	24N	120W
-0557	Jun 14	12:56:20	17954	452	-31621	50	T+	pp	0.2164	2.4944	1.4280	370.0	230.1	93.4	23S	121W
-0557	Dec 09	04:26:30	17946	452	-31615	55	P	a-	-0.6687	1.6244	0.6376	294.3	160.5	-	22N	7E
-0556	Jun 02	16:11:31	17939	451	-31609	60	P	t-	0.9686	1.0949	0.0670	279.5	61.0	-	20S	170W
-0556	Oct 29	00:36:15	17933	451	-31604	27	N	-a	1.4960	0.1470	-0.9201	113.9	-	-	13N	62E
-0556	Nov 27	16:05:20	17932	451	-31603	65	N	a-	-1.4016	0.3058	-0.7328	156.2	-	-	19N	168W
-0555	Apr 23	18:46:42	17925	451	-31598	32	P	-a	-0.8881	1.2058	0.2506	264.1	106.7	-	11S	152E
-0555	Oct 18	01:50:41	17918	451	-31592	37	P	-t	0.8547	1.3409	0.2396	318.7	117.0	-	8N	44E
-0554	Apr 13	11:43:16	17911	451	-31586	42	T-	-p	-0.1505	2.5541	1.6092	316.3	209.4	94.4	7S	101W
-0554	Oct 07	01:21:50	17903	451	-31580	47	T+	pp	0.1605	2.6060	1.5219	369.3	229.4	97.4	3N	52E
-0553	Apr 03	03:31:24	17896	450	-31574	52	P	a-	0.5973	1.7510	0.7730	305.6	176.1	-	2S	23E
-0553	Sep 26	06:25:04	17889	450	-31568	57	P	a-	-0.5502	1.8627	0.8344	324.8	186.4	-	2S	23W
-0552	Feb 21	23:24:29	17883	450	-31563	24	N	-t	-1.4350	0.2603	-0.8097	152.8	-	-	12N	88E
-0552	Mar 22	13:46:20	17881	450	-31562	62	N	t-	1.4008	0.3057	-0.7299	159.6	-	-	3N	129W
-0552	Aug 16	09:43:49	17875	450	-31557	29	N	-a	1.3818	0.2993	-0.6546	142.6	-	-	15S	71W
-0552	Sep 14	18:42:50	17874	450	-31556	67	N	a-	-1.2151	0.6159	-0.3591	201.9	-	-	7S	154E
-0551	Feb 09	23:37:00	17868	450	-31551	34	P	-t	-0.7494	1.5294	0.4372	332.6	153.5	-	16N	85E
-0551	Aug 06	02:21:42	17861	449	-31545	39	P	-a	0.6932	1.5662	0.6057	288.3	157.0	-	18S	40E
-0550	Jan 30	00:47:45	17853	449	-31539	44	T-	pp	-0.0251	2.8438	1.7805	362.8	229.3	103.6	19N	67E
-0550	Jul 26	15:50:51	17846	449	-31533	49	T-	pp	-0.0397	2.7874	1.7830	342.3	222.0	102.1	21S	163W
-0549	Jan 19	08:39:00	17839	449	-31527	54	P	a-	0.6804	1.6142	0.6049	304.0	161.6	-	22N	52W
-0549	Jul 15	22:36:04	17831	449	-31521	59	P	t-	-0.8297	1.3632	0.3086	311.1	129.1	-	24S	95E
-0549	Dec 10	12:07:06	17825	449	-31516	26	N	-a	-1.3415	0.3821	-0.5893	160.1	-	-	21N	108W
-0548	Jan 08	22:34:11	17824	449	-31515	64	N	a-	1.3213	0.4194	-0.5523	167.9	-	-	25N	98E
-0548	Jun 04	08:54:17	17818	448	-31510	31	N	-t	1.2475	0.5987	-0.4603	225.8	-	-	21S	61W
-0548	Nov 29	02:56:15	17811	448	-31504	36	P	-a	-0.7125	1.5503	0.5509	294.6	153.1	-	20N	28E
-0547	May 24	13:58:06	17803	448	-31498	41	T	-t	0.4372	2.0619	1.0497	334.7	203.2	34.9	19S	137W
-0547	Nov 18	12:45:53	17796	448	-31492	46	T-	pp	-0.0328	2.8258	1.7702	355.8	225.5	102.1	18N	120W
-0546	May 14	02:11:53	17789	448	-31486	51	T	a-	-0.3444	2.2065	1.2453	317.8	203.0	69.9	17S	39E

-0546	Nov 07	15:18:18	17782	448	-31480	56	P	t-	0.6747	1.6706	0.5704	340.8	170.7	-	15N	159W
-0545	Apr 04	11:52:33	17775	447	-31475	23	N	-a	1.4391	0.1930	-0.7585	116.1	-	-	2S	102W
-0545	May 03	18:53:08	17774	447	-31474	61	N	a-	-1.0657	0.8727	-0.0680	229.1	-	-	15S	149E
-0545	Oct 27	14:20:44	17767	447	-31468	66	N	t-	1.3420	0.4444	-0.6524	199.6	-	-	12N	145W
-0544	Mar 24	02:28:20	17761	447	-31463	33	P	-a	0.7576	1.4653	0.4703	295.0	146.2	-	2N	39E
-0544	Sep 16	04:11:39	17754	447	-31457	38	P	-a	-0.8518	1.2997	0.2906	284.4	118.1	-	6S	11E
-0543	Mar 13	10:34:35	17746	447	-31451	43	T+	pp	0.0175	2.8527	1.7995	362.8	230.3	104.5	5N	81W
-0543	Sep 05	18:05:06	17739	446	-31445	48	T-	-p	-0.1166	2.6258	1.6621	320.2	210.7	96.0	9S	163E
-0542	Mar 02	11:55:29	17732	446	-31439	53	P	t-	-0.7283	1.5649	0.4791	334.6	159.6	-	9N	101W
-0542	Aug 26	10:32:08	17724	446	-31433	58	P	a-	0.5847	1.7649	0.8051	296.7	174.0	-	13S	84W
-0541	Jan 20	21:08:07	17718	446	-31428	25	N	-t	1.4602	0.2040	-0.8461	131.6	-	-	23N	121E
-0541	Feb 19	12:26:59	17717	446	-31427	63	N	t-	-1.4202	0.2865	-0.7816	159.4	-	-	12N	109W
-0541	Jul 17	13:56:37	17711	446	-31422	30	N	-h	-1.3440	0.4013	-0.6171	178.3	-	-	24S	135W
-0541	Aug 16	00:52:13	17710	446	-31421	68	N	h-	1.3428	0.3928	-0.6045	170.8	-	-	15S	61E
-0540	Jan 10	06:55:35	17704	446	-31416	35	P	-a	0.7010	1.5700	0.5736	296.1	155.9	-	24N	27W
-0540	Jul 05	18:47:00	17696	445	-31410	40	P	-t	-0.6269	1.7395	0.6765	340.2	182.1	-	24S	152E
-0540	Dec 29	21:46:39	17689	445	-31404	45	T+	pp	0.0092	2.8257	1.8563	319.6	210.6	98.1	24N	109E
-0539	Jun 24	19:21:04	17682	445	-31398	50	T+	pp	0.1313	2.6505	1.5841	371.8	233.4	101.8	24S	142E
-0539	Dec 19	13:12:41	17675	445	-31392	55	P	a-	-0.6676	1.6270	0.6392	295.1	161.0	-	23N	124W
-0538	Jun 13	22:56:49	17667	445	-31386	60	P	t-	0.8857	1.2454	0.2205	292.0	107.9	-	22S	88E
-0538	Nov 09	08:49:59	17661	444	-31381	27	N	-a	1.5044	0.1336	-0.9377	109.1	-	-	17N	62W
-0538	Dec 09	00:35:45	17660	444	-31380	65	N	a-	-1.4051	0.3008	-0.7405	155.6	-	-	21N	64E
-0537	May 05	02:10:35	17654	444	-31375	32	P	-a	-0.9564	1.0788	0.1270	252.6	77.2	-	15S	39E
-0537	Oct 29	09:43:28	17647	444	-31369	37	P	-t	0.8662	1.3211	0.2171	317.5	111.8	-	12N	76W
-0536	Apr 23	19:16:05	17639	444	-31363	42	T-	-p	-0.2183	2.4292	1.4853	314.8	207.0	88.8	11S	144E
-0536	Oct 17	09:16:35	17632	444	-31357	47	T+	pp	0.1753	2.5790	1.4945	368.3	228.3	95.8	7N	68W
-0535	Apr 13	10:56:41	17625	444	-31351	52	P	a-	0.5347	1.8662	0.8874	311.9	185.5	-	6S	90W
-0535	Oct 06	14:36:29	17618	443	-31345	57	P	a-	-0.5303	1.8990	0.8711	325.4	188.6	-	2N	148W
-0534	Mar 04	06:42:08	17611	443	-31340	24	N	-t	-1.4828	0.1720	-0.8969	125.4	-	-	8N	24W
-0534	Apr 02	20:53:04	17610	443	-31339	62	N	t-	1.3441	0.4099	-0.6262	183.7	-	-	1S	122E
-0534	Aug 27	17:45:50	17604	443	-31334	29	N	-a	1.4217	0.2272	-0.7289	125.0	-	-	11S	167E
-0534	Sep 26	03:03:48	17603	443	-31333	67	N	a-	-1.1888	0.6646	-0.3113	208.4	-	-	3S	26E
-0533	Feb 21	06:54:55	17597	443	-31328	34	P	-t	-0.7888	1.4550	0.3670	326.7	142.1	-	12N	26W
-0533	Aug 17	10:11:03	17590	443	-31322	39	P	-a	0.7440	1.4754	0.5100	283.8	146.5	-	15S	79W
-0532	Feb 10	08:31:05	17582	442	-31316	44	T-	pp	-0.0543	2.7871	1.7300	360.9	228.5	103.0	16N	50W
-0532	Aug 05	23:12:01	17575	442	-31310	49	T+	pp	0.0196	2.8273	1.8167	344.2	222.7	102.4	19S	86E
-0531	Jan 29	16:55:25	17568	442	-31304	54	P	a-	0.6598	1.6491	0.6456	304.6	165.4	-	20N	176W
-0531	Jul 26	05:23:19	17561	442	-31298	59	P	t-	-0.7611	1.4916	0.4319	321.8	150.2	-	22S	7W
-0531	Dec 20	20:58:19	17555	442	-31293	26	N	-a	-1.3450	0.3753	-0.5955	158.8	-	-	22N	119E
-0530	Jan 19	07:11:17	17553	442	-31292	64	N	a-	1.3073	0.4433	-0.5251	171.9	-	-	23N	31W

-0530 Jun 15	15:20:37	17547	442	-31287	31	N	-t	1.3293	0.4480	-0.6097	197.7	-	-	22S	158W
-0530 Jul 15	06:08:29	17546	442	-31286	69	N	t-	-1.5126	0.1197	-0.9539	106.8	-	-	24S	19W
-0530 Dec 10	11:41:02	17540	441	-31281	36	P	-a	-0.7151	1.5466	0.5451	295.2	152.8	-	22N	103W
-0529 Jun 04	20:49:29	17533	441	-31275	41	P	-t	0.5167	1.9142	0.9056	327.4	193.1	-	21S	119E
-0529 Nov 29	21:09:23	17526	441	-31269	46	T-	pp	-0.0349	2.8237	1.7649	357.1	226.1	102.2	21N	114E
-0528 May 24	09:28:46	17518	441	-31263	51	T-	p-	-0.2679	2.3454	1.3871	320.0	207.6	83.4	20S	71W
-0528 Nov 17	23:19:54	17511	441	-31257	56	P	t-	0.6692	1.6817	0.5794	342.1	172.0	-	19N	80E
-0527 Apr 14	19:28:38	17505	441	-31252	23	Ne	-a	1.5031	0.0753	-0.8757	73.4	-	-	6S	142E
-0527 May 14	02:20:24	17504	441	-31251	61	P	a-	-0.9944	1.0032	0.0632	242.2	54.3	-	18S	36E
-0527 Nov 06	22:21:07	17497	440	-31245	66	N	t-	1.3321	0.4625	-0.6342	203.0	-	-	16N	94E
-0526 Apr 04	09:54:02	17491	440	-31240	33	P	-a	0.8207	1.3499	0.3542	288.0	129.6	-	2S	74W
-0526 Sep 27	12:21:21	17483	440	-31234	38	P	-a	-0.8737	1.2594	0.2505	280.3	110.0	-	2S	114W
-0525 Mar 24	17:40:04	17476	440	-31228	43	T+	pp	0.0780	2.7416	1.6886	363.4	230.3	103.3	1N	170E
-0525 Sep 17	02:22:04	17469	440	-31222	48	T-	-p	-0.1468	2.5712	1.6058	319.4	209.6	94.0	5S	37E
-0524 Mar 12	18:53:03	17462	439	-31216	53	P	t-	-0.6716	1.6673	0.5848	340.9	173.4	-	5N	152E
-0524 Sep 05	18:39:58	17454	439	-31210	58	P	a-	0.5485	1.8335	0.8693	300.4	179.0	-	9S	152E
-0523 Jan 31	05:05:32	17448	439	-31205	25	N	-t	1.4780	0.1682	-0.8758	119.3	-	-	20N	1E
-0523 Mar 01	19:47:00	17447	439	-31204	63	N	t-	-1.3731	0.3699	-0.6921	179.1	-	-	9N	139E
-0523 Jul 27	21:04:26	17441	439	-31199	30	N	-h	-1.4118	0.2800	-0.7445	151.3	-	-	22S	118E
-0523 Aug 26	08:34:31	17440	439	-31198	68	N	h-	1.3026	0.4699	-0.5338	186.3	-	-	12S	56W
-0522 Jan 20	15:23:11	17434	439	-31193	35	P	-a	0.7132	1.5451	0.5536	293.5	153.3	-	22N	154W
-0522 Jul 17	01:22:48	17427	439	-31187	40	P	-t	-0.7047	1.5988	0.5318	332.7	165.6	-	23S	52E
-0521 Jan 10	06:31:00	17419	438	-31181	45	T+	pp	0.0174	2.8095	1.8423	319.3	210.6	98.2	23N	22W
-0521 Jul 06	01:48:13	17412	438	-31175	50	T+	pp	0.0478	2.8040	1.7371	372.5	234.9	105.7	24S	45E
-0521 Dec 30	21:56:30	17405	438	-31169	55	P	a-	-0.6651	1.6317	0.6433	296.0	161.8	-	23N	105E
-0520 Jun 24	05:45:12	17398	438	-31163	60	P	t-	0.8041	1.3940	0.3714	302.6	136.5	-	23S	15W
-0520 Nov 19	17:05:59	17392	438	-31158	27	N	-h	1.5102	0.1247	-0.9501	105.8	-	-	20N	173E
-0520 Dec 19	09:03:29	17390	438	-31157	65	N	h-	-1.4072	0.2979	-0.7455	155.4	-	-	22N	63W
-0519 May 15	09:33:20	17384	438	-31152	32	P	-a	-1.0260	0.9497	0.0006	239.8	5.5	-	18S	73W
-0519 Jun 13	16:58:11	17383	437	-31151	70	Nb	a-	1.5036	0.0829	-0.8851	78.9	-	-	21S	176E
-0519 Nov 08	17:40:42	17377	437	-31146	37	P	-t	0.8741	1.3076	0.2016	316.6	108.0	-	16N	164E
-0518 May 05	02:45:46	17370	437	-31140	42	T	-p	-0.2883	2.3004	1.3569	312.6	203.6	79.9	14S	29E
-0518 Oct 28	17:16:58	17363	437	-31134	47	T+	pp	0.1859	2.5593	1.4750	367.2	227.4	94.5	12N	170E
-0517 Apr 24	18:16:24	17356	437	-31128	52	T	a-	0.4683	1.9887	1.0087	317.9	194.2	14.3	10S	158E
-0517 Oct 17	22:55:13	17348	437	-31122	57	P	a-	-0.5161	1.9246	0.8975	325.4	190.0	-	7N	86E
-0516 Mar 14	13:48:20	17342	436	-31117	24	Ne	-t	-1.5386	0.0692	-0.9987	80.4	-	-	3N	132W
-0516 Apr 13	03:50:17	17341	436	-31116	62	N	t-	1.2807	0.5267	-0.5102	206.6	-	-	6S	15E
-0516 Sep 07	01:56:52	17335	436	-31111	29	N	-a	1.4545	0.1683	-0.7902	108.2	-	-	7S	42E
-0516 Oct 06	11:33:17	17334	436	-31110	67	N	a-	-1.1694	0.7007	-0.2760	212.8	-	-	2N	103W
-0515 Mar 03	14:02:34	17328	436	-31105	34	P	-t	-0.8362	1.3660	0.2821	319.2	126.1	-	8N	135W

-0515 Aug 27	18:08:16	17321	436	-31099	39	P	-a	0.7878	1.3976	0.4272	279.6	136.0	-	12S	160E
-0514 Feb 20	16:06:18	17314	436	-31093	44	T-	pp	-0.0907	2.7170	1.6663	358.8	227.5	101.7	13N	165W
-0514 Aug 17	06:40:14	17306	436	-31087	49	T+	pp	0.0720	2.7345	1.7173	345.7	222.7	101.3	16S	27W
-0513 Feb 10	01:04:06	17299	435	-31081	54	P	a-	0.6322	1.6969	0.6993	305.9	170.2	-	17N	61E
-0513 Aug 06	12:16:07	17292	435	-31075	59	P	t-	-0.6976	1.6109	0.5458	331.0	166.2	-	20S	111W
-0512 Jan 01	05:46:04	17286	435	-31070	26	N	-a	-1.3514	0.3631	-0.6066	156.4	-	-	22N	13W
-0512 Jan 30	15:41:13	17285	435	-31069	64	N	a-	1.2877	0.4776	-0.4873	177.6	-	-	21N	159W
-0512 Jun 25	21:50:03	17279	435	-31064	31	N	-t	1.4084	0.3024	-0.7544	164.2	-	-	22S	104E
-0512 Jul 25	12:45:53	17277	435	-31063	69	N	t-	-1.4406	0.2529	-0.8227	153.4	-	-	23S	119W
-0512 Dec 20	20:22:51	17271	435	-31058	36	P	-a	-0.7195	1.5394	0.5364	295.7	152.1	-	23N	127E
-0511 Jun 15	03:44:15	17264	435	-31052	41	P	-t	0.5941	1.7708	0.7650	319.4	181.2	-	23S	14E
-0511 Dec 10	05:32:32	17257	434	-31046	46	T-	pp	-0.0360	2.8229	1.7616	358.4	226.6	102.4	23N	12W
-0510 Jun 04	16:45:50	17250	434	-31040	51	T-	p-	-0.1909	2.4855	1.5296	321.4	210.9	92.2	22S	178E
-0510 Nov 29	07:23:44	17243	434	-31034	56	P	t-	0.6658	1.6887	0.5850	343.0	172.8	-	21N	41W
-0509 May 25	09:45:08	17235	434	-31028	61	P	a-	-0.9211	1.1375	0.1977	254.2	94.3	-	20S	77W
-0509 Nov 18	06:26:30	17228	434	-31022	66	N	t-	1.3253	0.4748	-0.6212	205.1	-	-	19N	28W
-0508 Apr 14	17:10:59	17222	433	-31017	33	P	-a	0.8901	1.2232	0.2263	279.2	105.9	-	6S	174E
-0508 Oct 07	20:40:31	17215	433	-31011	38	P	-a	-0.8888	1.2315	0.2229	277.2	103.8	-	3N	120E
-0507 Apr 04	00:37:21	17208	433	-31005	43	T+	pp	0.1446	2.6194	1.5665	363.3	229.2	99.7	3S	64E
-0507 Sep 27	10:46:35	17201	433	-30999	48	T-	-p	-0.1711	2.5274	1.5603	318.6	208.5	92.0	1S	91W
-0506 Mar 24	01:44:21	17194	433	-30993	53	P	t-	-0.6095	1.7795	0.7003	347.0	186.1	-	1N	48E
-0506 Sep 17	02:54:51	17186	433	-30987	58	P	a-	0.5185	1.8908	0.9222	303.6	182.9	-	4S	27E
-0505 Feb 11	12:56:44	17180	432	-30982	25	N	-t	1.5015	0.1219	-0.9157	101.5	-	-	17N	117W
-0505 Mar 13	03:00:13	17179	432	-30981	63	N	t-	-1.3194	0.4653	-0.5906	198.2	-	-	5N	29E
-0505 Aug 08	04:17:14	17173	432	-30976	30	N	-h	-1.4744	0.1682	-0.8625	119.1	-	-	20S	9E
-0505 Sep 06	16:23:41	17172	432	-30975	68	N	h-	1.2684	0.5358	-0.4743	198.6	-	-	8S	175W
-0504 Jan 31	23:44:19	17166	432	-30970	35	P	-a	0.7316	1.5088	0.5225	290.2	149.4	-	20N	80E
-0504 Jul 27	08:05:01	17159	432	-30964	40	P	-t	-0.7767	1.4690	0.3976	324.7	146.5	-	22S	49W
-0503 Jan 20	15:07:30	17152	432	-30958	45	T+	pp	0.0325	2.7805	1.8157	319.0	210.6	98.1	21N	152W
-0503 Jul 16	08:23:57	17145	431	-30952	50	T-	pp	-0.0294	2.8380	1.7705	372.1	234.7	105.9	23S	54W
-0502 Jan 10	06:33:57	17137	431	-30946	55	P	a-	-0.6576	1.6457	0.6570	297.5	163.5	-	22N	24W
-0502 Jul 05	12:39:38	17130	431	-30940	60	P	h-	0.7260	1.5364	0.5156	311.2	156.8	-	23S	119W
-0502 Dec 01	01:21:45	17124	431	-30935	27	N	-h	1.5157	0.1161	-0.9615	102.5	-	-	23N	49E
-0502 Dec 30	17:26:12	17123	431	-30934	65	N	h-	-1.4059	0.3011	-0.7438	156.7	-	-	22N	171E
-0501 May 26	16:54:24	17117	431	-30929	32	N	-a	-1.0977	0.8172	-0.1298	225.0	-	-	21S	175E
-0501 Jun 25	00:14:29	17116	431	-30928	70	N	a-	1.4278	0.2213	-0.7450	126.9	-	-	22S	66E
-0501 Nov 20	01:41:13	17110	431	-30923	37	P	-t	0.8791	1.2991	0.1920	316.1	105.6	-	19N	43E
-0500 May 15	10:10:13	17101	430	-30917	42	T	-a	-0.3626	2.1643	1.2205	309.7	198.7	65.9	18S	83W
-0500 Nov 08	01:24:50	17093	430	-30911	47	T+	pp	0.1912	2.5492	1.4658	366.1	226.7	93.8	15N	47E



# 5TH CENTURY BCE

In the 5th century BCE the total number of lunar eclipses was 242 lunar eclipses: 88 penumbral lunar eclipses, 90 partial lunar eclipses, 64 total lunar eclipses (45 central total lunar eclipses, 19 non-central total lunar eclipses).

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-0499 May 05	01:29:25	17084	430	-30905	52	T	p-	0.3971	2.1203	1.1384	323.6	201.9	55.2	14S	47E
-0499 Oct 28	07:21:16	17075	430	-30899	57	P	a-	-0.5070	1.9407	0.9147	325.0	190.6	-	11N	42W
-0498 Apr 24	10:40:14	17067	430	-30893	62	N	t-	1.2119	0.6536	-0.3845	228.1	-	-	10S	89W
-0498 Sep 18	10:15:58	17059	430	-30888	29	N	-a	1.4812	0.1206	-0.8404	92.0	-	-	3S	84W
-0498 Oct 17	20:10:12	17058	430	-30887	67	N	a-	-1.1556	0.7262	-0.2512	215.8	-	-	6N	126E
-0497 Mar 14	21:01:49	17051	429	-30882	34	P	-t	-0.8906	1.2639	0.1845	309.9	103.3	-	4N	118E
-0497 Sep 08	02:12:12	17042	429	-30876	39	P	-a	0.8255	1.3310	0.3553	275.9	125.6	-	8S	38E
-0496 Mar 02	23:34:38	17033	429	-30870	44	T-	pp	-0.1339	2.6345	1.5903	356.3	225.9	99.2	9N	81E
-0496 Aug 27	14:14:56	17025	429	-30864	49	T+	pp	0.1182	2.6531	1.6293	346.9	222.2	99.1	12S	142W
-0495 Feb 20	09:05:59	17016	429	-30858	54	P	a-	0.5981	1.7563	0.7647	307.5	175.6	-	14N	61W
-0495 Aug 16	19:16:36	17007	428	-30852	59	P	t-	-0.6407	1.7180	0.6475	338.6	178.4	-	16S	143E
-0494 Jan 11	14:29:30	17000	428	-30847	26	N	-a	-1.3612	0.3445	-0.6239	152.7	-	-	21N	144W
-0494 Feb 10	00:05:11	16999	428	-30846	64	N	a-	1.2633	0.5205	-0.4407	184.3	-	-	18N	74E
-0494 Jul 07	04:25:04	16991	428	-30841	31	N	-t	1.4833	0.1647	-0.8914	122.4	-	-	22S	4E
-0494 Aug 05	19:30:34	16990	428	-30840	69	N	t-	-1.3735	0.3771	-0.7006	185.1	-	-	20S	139E
-0493 Jan 01	05:00:35	16983	428	-30835	36	P	-a	-0.7267	1.5268	0.5226	295.7	150.9	-	23N	3W
-0493 Jun 26	10:43:26	16974	428	-30829	41	P	-t	0.6685	1.6330	0.6297	310.7	167.6	-	23S	91W
-0493 Dec 21	13:51:08	16966	428	-30823	46	T-	pp	-0.0404	2.8157	1.7525	359.6	227.2	102.5	24N	137W
-0492 Jun 15	00:05:25	16957	427	-30817	51	T-	p-	-0.1153	2.6234	1.6691	322.1	212.9	97.4	23S	68E
-0492 Dec 09	15:25:51	16948	427	-30811	56	P	t-	0.6612	1.6973	0.5931	343.9	173.9	-	23N	162W
-0491 Jun 04	17:10:28	16940	427	-30805	61	P	a-	-0.8482	1.2716	0.3312	265.0	119.8	-	23S	171E

-0491	Nov 28	14:32:41	16931	427	-30799	66	N	t-	1.3185	0.4864	-0.6081	206.9	-	-	22N	150W
-0490	Apr 26	00:21:19	16924	427	-30794	33	P	-a	0.9639	1.0886	0.0901	268.3	68.3	-	10S	65E
-0490	Oct 19	05:07:37	16915	427	-30788	38	P	-a	-0.8983	1.2138	0.2058	274.9	99.8	-	7N	9W
-0489	Apr 15	07:23:57	16907	426	-30782	43	T+	pp	0.2191	2.4828	1.4296	362.2	226.6	92.3	7S	40W
-0489	Oct 08	19:19:47	16898	426	-30776	48	T-	-p	-0.1885	2.4963	1.5277	318.0	207.5	90.4	4N	138E
-0488	Apr 03	08:25:02	16890	426	-30770	53	P	t-	-0.5388	1.9078	0.8317	353.1	198.2	-	3S	55W
-0488	Sep 27	11:18:06	16881	426	-30764	58	P	a-	0.4958	1.9346	0.9616	306.1	185.7	-	0S	101W
-0487	Feb 21	20:39:22	16874	426	-30759	25	N	-t	1.5325	0.0617	-0.9693	72.3	-	-	14N	126E
-0487	Mar 23	10:05:05	16873	426	-30758	63	N	t-	-1.2580	0.5750	-0.4749	217.1	-	-	0N	79W
-0487	Aug 18	11:37:09	16865	426	-30753	30	N	-h	-1.5303	0.0689	-0.9684	77.2	-	-	17S	103W
-0487	Sep 17	00:20:56	16864	426	-30752	68	N	h-	1.2414	0.5885	-0.4280	208.0	-	-	4S	64E
-0486	Feb 11	07:59:16	16857	425	-30747	35	P	-a	0.7557	1.4617	0.4808	286.2	143.9	-	17N	45W
-0486	Aug 07	14:52:13	16848	425	-30741	40	P	-t	-0.8440	1.3476	0.2717	316.1	123.6	-	19S	152W
-0485	Jan 31	23:39:01	16840	425	-30735	45	T+	pp	0.0519	2.7436	1.7815	318.7	210.5	97.9	19N	80E
-0485	Jul 27	15:05:24	16831	425	-30729	50	T-	pp	-0.1026	2.7042	1.6357	370.9	233.1	103.1	21S	156W
-0484	Jan 21	15:05:09	16823	425	-30723	55	P	a-	-0.6456	1.6676	0.6791	299.3	166.0	-	21N	153W
-0484	Jul 15	19:40:30	16814	424	-30717	60	P	h-	0.6521	1.6713	0.6519	318.1	171.9	-	22S	135E
-0484	Dec 11	09:36:31	16807	424	-30712	27	N	-h	1.5213	0.1068	-0.9728	98.7	-	-	24N	75W
-0483	Jan 10	01:43:18	16806	424	-30711	65	N	h-	-1.4007	0.3110	-0.7349	159.6	-	-	22N	47E
-0483	Jun 06	00:17:08	16799	424	-30706	32	N	-a	-1.1681	0.6873	-0.2582	208.7	-	-	23S	64E
-0483	Jul 05	07:36:17	16797	424	-30705	70	N	a-	1.3556	0.3530	-0.6121	157.8	-	-	22S	45W
-0483	Nov 30	09:42:04	16790	424	-30700	37	P	-t	0.8837	1.2908	0.1834	315.4	103.3	-	22N	77W
-0482	May 26	17:34:29	16782	424	-30694	42	T	-a	-0.4367	2.0287	1.0841	306.1	192.4	42.5	20S	164E
-0482	Nov 19	09:35:55	16773	424	-30688	47	T+	pp	0.1945	2.5424	1.4605	365.0	226.1	93.3	19N	77W
-0481	May 16	08:37:42	16765	423	-30682	52	T	p-	0.3227	2.2579	1.2736	328.7	208.6	74.5	17S	61W
-0481	Nov 08	15:52:43	16756	423	-30676	57	P	a-	-0.5017	1.9497	0.9254	324.2	190.8	-	15N	171W
-0480	May 04	17:23:42	16748	423	-30670	62	N	t-	1.1381	0.7898	-0.2500	248.2	-	-	13S	168E
-0480	Sep 28	18:43:17	16741	423	-30665	29	N	-a	1.5017	0.0842	-0.8792	77.1	-	-	1N	147E
-0480	Oct 28	04:52:49	16740	423	-30664	67	N	a-	-1.1463	0.7435	-0.2341	217.6	-	-	10N	6W
-0479	Mar 25	03:52:13	16733	423	-30659	34	P	-t	-0.9522	1.1488	0.0737	298.5	66.3	-	0S	13E
-0479	Sep 18	10:24:45	16724	423	-30653	39	P	-a	0.8559	1.2779	0.2971	272.9	116.1	-	3S	88W
-0478	Mar 14	06:55:28	16716	422	-30647	44	T-	pp	-0.1840	2.5394	1.5017	353.3	223.5	95.0	5N	31W
-0478	Sep 07	21:56:43	16707	422	-30641	49	T+	-p	0.1575	2.5843	1.5539	348.0	221.5	96.4	8S	100E
-0477	Mar 03	17:00:17	16699	422	-30635	54	P	a-	0.5571	1.8285	0.8430	309.6	181.5	-	10N	179E
-0477	Aug 28	02:25:10	16690	422	-30629	59	P	t-	-0.5910	1.8120	0.7360	344.9	187.7	-	13S	34E
-0476	Jan 22	23:05:30	16683	422	-30624	26	N	-a	-1.3771	0.3144	-0.6522	146.4	-	-	20N	87E
-0476	Feb 21	08:19:32	16682	422	-30623	64	N	a-	1.2312	0.5776	-0.3800	192.8	-	-	14N	51W
-0476	Jul 17	11:07:07	16675	422	-30618	31	Ne	-t	1.5527	0.0373	-1.0187	58.8	-	-	21S	97W
-0476	Aug 16	02:25:15	16674	421	-30617	69	N	t-	-1.3138	0.4878	-0.5923	208.3	-	-	17S	34E
-0475	Jan 11	13:32:29	16667	421	-30612	36	P	-a	-0.7380	1.5064	0.5016	295.3	148.7	-	22N	131W

-0475 Jul 06	17:48:38	16658	421	-30606	41	P	-t	0.7390	1.5028	0.5014	301.6	152.1	-	23S	162E
-0475 Dec 31	22:05:41	16650	421	-30600	46	T-	pp	-0.0474	2.8036	1.7391	360.7	227.7	102.5	24N	100E
-0474 Jun 26	07:28:15	16642	421	-30594	51	T-	pp	-0.0419	2.7575	1.8044	322.0	213.6	99.8	24S	44W
-0474 Dec 20	23:26:49	16633	421	-30588	56	P	t-	0.6557	1.7072	0.6033	344.7	175.3	-	24N	78E
-0473 Jun 16	00:34:42	16625	420	-30582	61	P	a-	-0.7744	1.4075	0.4659	274.7	139.4	-	24S	59E
-0473 Dec 09	22:41:18	16616	420	-30576	66	N	t-	1.3131	0.4951	-0.5970	208.1	-	-	24N	88E
-0472 May 06	07:25:19	16609	420	-30571	33	N	-a	1.0416	0.9471	-0.0536	255.1	-	-	14S	43W
-0472 Jun 04	16:29:39	16608	420	-30570	71	Nb	a-	-1.5487	0.0027	-0.9702	14.4	-	-	23S	179E
-0472 Oct 29	13:41:17	16601	420	-30565	38	P	-a	-0.9031	1.2044	0.1974	273.3	97.5	-	11N	139W
-0471 Apr 25	14:04:35	16593	420	-30559	43	T	-t	0.2977	2.3389	1.2852	360.1	222.2	79.7	11S	143W
-0471 Oct 19	03:59:20	16585	420	-30553	48	T-	-p	-0.2006	2.4747	1.5048	317.5	206.8	89.1	8N	7E
-0470 Apr 14	15:00:50	16576	419	-30547	53	P	t-	-0.4636	2.0443	0.9712	358.6	208.8	-	8S	156W
-0470 Oct 08	19:47:00	16568	419	-30541	58	P	a-	0.4782	1.9691	0.9918	308.2	187.8	-	4N	130E
-0469 Apr 03	17:04:57	16560	419	-30535	63	N	t-	-1.1913	0.6944	-0.3496	234.8	-	-	4S	173E
-0469 Sep 28	08:24:55	16551	419	-30529	68	N	h-	1.2204	0.6303	-0.3924	215.4	-	-	1N	59W
-0468 Feb 22	16:05:25	16544	419	-30524	35	P	-a	0.7880	1.3998	0.4243	281.2	136.1	-	13N	168W
-0468 Aug 17	21:48:37	16536	419	-30518	40	P	-t	-0.9035	1.2409	0.1604	307.7	96.6	-	16S	103E
-0467 Feb 11	08:01:40	16528	418	-30512	45	T+	-p	0.0790	2.6925	1.7331	318.2	210.3	97.2	16N	47W
-0467 Aug 06	21:56:52	16520	418	-30506	50	T-	pp	-0.1682	2.5844	1.5148	369.1	230.6	97.9	19S	100E
-0466 Jan 31	23:27:40	16511	418	-30500	55	P	a-	-0.6269	1.7018	0.7135	301.9	169.6	-	18N	81E
-0466 Jul 27	02:50:15	16503	418	-30494	60	P	a-	0.5841	1.7956	0.7772	323.4	183.2	-	21S	27E
-0466 Dec 22	17:47:29	16496	418	-30489	27	N	-h	1.5293	0.0927	-0.9881	92.3	-	-	25N	163E
-0465 Jan 21	09:51:54	16495	418	-30488	65	N	h-	-1.3896	0.3317	-0.7147	165.1	-	-	20N	76W
-0465 Jun 17	07:39:58	16488	418	-30483	32	N	-a	-1.2388	0.5571	-0.3877	190.1	-	-	25S	48W
-0465 Jul 16	15:02:57	16487	417	-30482	70	N	a-	1.2865	0.4795	-0.4849	181.2	-	-	21S	157W
-0465 Dec 11	17:43:24	16480	417	-30477	37	P	-t	0.8880	1.2826	0.1758	314.6	101.3	-	24N	162E
-0464 Jun 06	00:56:35	16471	417	-30471	42	P	-a	-0.5126	1.8904	0.9441	301.6	184.5	-	23S	53E
-0464 Nov 29	17:50:00	16463	417	-30465	47	T+	pp	0.1962	2.5382	1.4586	363.8	225.5	93.0	21N	159E
-0463 May 26	15:42:27	16455	417	-30459	52	T+	pp	0.2461	2.4000	1.4127	333.3	214.1	87.2	20S	169W
-0463 Nov 19	00:29:19	16447	417	-30453	57	P	a-	-0.4995	1.9527	0.9305	323.2	190.6	-	18N	59E
-0462 May 16	00:01:28	16439	416	-30447	62	N	t-	1.0602	0.9337	-0.1081	266.9	-	-	16S	66E
-0462 Oct 10	03:17:35	16432	416	-30442	29	N	-a	1.5169	0.0575	-0.9084	63.9	-	-	6N	16E
-0462 Nov 08	13:40:45	16430	416	-30441	67	N	a-	-1.1411	0.7530	-0.2246	218.5	-	-	14N	139W
-0461 Apr 05	10:36:11	16424	416	-30436	34	Nx	-t	-1.0191	1.0238	-0.0470	284.9	-	-	4S	90W
-0461 Sep 29	18:44:08	16415	416	-30430	39	P	-a	0.8799	1.2365	0.2505	270.7	107.5	-	1N	145E
-0460 Mar 24	14:09:34	16407	416	-30424	44	T-	pp	-0.2405	2.4325	1.4012	349.7	220.3	88.4	0N	142W
-0460 Sep 18	05:46:11	16399	416	-30418	49	T+	-p	0.1895	2.5290	1.4920	349.0	220.8	93.4	4S	19W
-0459 Mar 14	00:48:46	16391	415	-30412	54	P	a-	0.5106	1.9109	0.9311	311.7	187.3	-	5N	59E
-0459 Sep 07	09:41:10	16383	415	-30406	59	P	t-	-0.5477	1.8940	0.8127	350.1	195.0	-	9S	77W
-0458 Feb 02	07:35:15	16376	415	-30401	26	N	-a	-1.3980	0.2753	-0.6897	137.5	-	-	17N	41W

-0458	Mar 03	16:27:48	16374	415	-30400	64	N	a-	1.1942	0.6438	-0.3104	202.0	-	-	10N	174W
-0458	Aug 27	09:29:20	16366	415	-30394	69	N	t-	-1.2609	0.5858	-0.4964	226.0	-	-	14S	73W
-0457	Jan 22	21:57:09	16360	415	-30389	36	P	-a	-0.7548	1.4757	0.4706	294.2	145.1	-	20N	103E
-0457	Jul 18	01:00:16	16351	415	-30383	41	P	-h	0.8049	1.3811	0.3811	292.1	134.6	-	22S	53E
-0456	Jan 12	06:12:50	16343	414	-30377	46	T-	pp	-0.0597	2.7812	1.7162	361.7	228.2	102.5	23N	22W
-0456	Jul 06	14:56:15	16335	414	-30371	51	T+	pp	0.0277	2.7833	1.8305	321.4	213.3	99.8	23S	156W
-0456	Dec 31	07:21:29	16327	414	-30365	56	P	t-	0.6454	1.7256	0.6228	345.9	177.6	-	24N	41W
-0455	Jun 26	08:02:32	16319	414	-30359	61	P	a-	-0.7039	1.5380	0.5944	283.0	154.5	-	24S	54W
-0455	Dec 20	06:47:50	16311	414	-30353	66	N	t-	1.3057	0.5071	-0.5818	209.8	-	-	25N	34W
-0454	May 17	14:24:01	16304	414	-30348	33	N	-h	1.1226	0.8000	-0.2034	239.0	-	-	17S	150W
-0454	Jun 15	23:39:38	16303	414	-30347	71	N	h-	-1.4801	0.1305	-0.8462	99.6	-	-	25S	71E
-0454	Nov 09	22:20:06	16296	413	-30342	38	P	-a	-0.9045	1.2011	0.1955	272.2	96.8	-	15N	90E
-0453	May 06	20:37:46	16288	413	-30336	43	T	-t	0.3814	2.1857	1.1310	356.8	215.6	57.1	14S	117E
-0453	Oct 30	12:45:22	16280	413	-30330	48	T-	-p	-0.2078	2.4620	1.4910	317.2	206.3	88.3	12N	126W
-0452	Apr 24	21:28:39	16272	413	-30324	53	T	t-	-0.3813	2.1938	1.1235	363.5	217.9	56.1	11S	105E
-0452	Oct 19	04:23:30	16264	413	-30318	58	T	p-	0.4671	1.9914	1.0101	309.9	189.2	15.1	9N	1W
-0451	Apr 13	23:59:12	16256	412	-30312	63	N	t-	-1.1186	0.8248	-0.2135	251.5	-	-	8S	68E
-0451	Oct 08	16:35:18	16247	412	-30306	68	N	h-	1.2051	0.6614	-0.3673	220.9	-	-	5N	176E
-0450	Mar 05	00:05:33	16241	412	-30301	35	P	-a	0.8259	1.3276	0.3573	275.2	125.9	-	9N	70E
-0450	Aug 29	04:52:41	16233	412	-30295	40	P	-t	-0.9563	1.1462	0.0611	299.5	60.6	-	13S	5W
-0449	Feb 22	16:17:06	16225	412	-30289	45	T+	-p	0.1121	2.6305	1.6738	317.7	209.8	96.0	12N	172W
-0449	Aug 18	04:56:35	16217	412	-30283	50	T-	pp	-0.2276	2.4760	1.4051	366.8	227.2	90.8	16S	6W
-0448	Feb 12	07:42:30	16208	411	-30277	55	P	a-	-0.6024	1.7466	0.7586	304.9	174.0	-	15N	44W
-0448	Aug 06	10:08:46	16201	411	-30271	60	P	a-	0.5222	1.9087	0.8910	327.4	191.6	-	18S	84W
-0447	Jan 02	01:53:16	16194	411	-30266	27	N	-t	1.5410	0.0717	-1.0099	81.5	-	-	25N	41E
-0447	Jan 31	17:52:07	16192	411	-30265	65	N	t-	-1.3723	0.3635	-0.6832	172.8	-	-	18N	163E
-0447	Jun 27	15:07:33	16186	411	-30260	32	N	-a	-1.3061	0.4336	-0.5110	169.5	-	-	25S	160W
-0447	Jul 26	22:37:45	16185	411	-30259	70	N	a-	1.2231	0.5957	-0.3686	199.2	-	-	20S	88E
-0447	Dec 22	01:42:21	16178	411	-30254	37	P	-t	0.8945	1.2699	0.1644	313.4	98.1	-	24N	42E
-0446	Jun 17	08:19:39	16170	411	-30248	42	P	-a	-0.5872	1.7545	0.8060	296.4	174.8	-	24S	59W
-0446	Dec 11	02:04:14	16162	410	-30242	47	T+	pp	0.1985	2.5324	1.4558	362.5	225.0	92.7	23N	35E
-0445	Jun 06	22:45:38	16154	410	-30236	52	T+	pp	0.1687	2.5439	1.5529	337.1	218.2	95.6	22S	84E
-0445	Nov 30	09:07:06	16146	410	-30230	57	P	a-	-0.4977	1.9545	0.9351	322.1	190.4	-	21N	71W
-0444	May 26	06:36:01	16138	410	-30224	62	P	t-	0.9801	1.0821	0.0378	283.9	46.7	-	19S	34W
-0444	Oct 20	11:58:46	16131	410	-30219	29	N	-a	1.5271	0.0399	-0.9281	53.4	-	-	10N	116W
-0444	Nov 18	22:31:30	16130	410	-30218	67	N	a-	-1.1378	0.7587	-0.2183	218.9	-	-	17N	87E
-0443	Apr 15	17:14:03	16123	410	-30213	34	N	-t	-1.0910	0.8899	-0.1769	268.7	-	-	9S	168E
-0443	Oct 10	03:10:05	16115	409	-30207	39	P	-a	0.8982	1.2054	0.2145	269.1	100.2	-	5N	17E
-0442	Apr 04	21:17:59	16107	409	-30201	44	T	-p	-0.3027	2.3153	1.2902	345.4	215.8	78.2	4S	109E
-0442	Sep 29	13:43:21	16099	409	-30195	49	T+	-p	0.2144	2.4864	1.4432	350.0	220.1	90.6	0N	140W

-0441	Mar 25	08:28:28	16091	409	-30189	54	T	a-	0.4558	2.0085	1.0344	314.1	193.3	28.0	1N	58W
-0441	Sep 18	17:06:40	16083	409	-30183	59	P	t-	-0.5125	1.9613	0.8748	354.2	200.3	-	5S	170E
-0440	Feb 13	15:56:06	16077	409	-30178	26	N	-a	-1.4263	0.2224	-0.7407	124.3	-	-	14N	168W
-0440	Mar 14	00:26:39	16075	409	-30177	64	N	a-	1.1492	0.7247	-0.2263	212.4	-	-	6N	64E
-0440	Sep 06	16:44:19	16068	408	-30171	69	N	t-	-1.2159	0.6695	-0.4149	239.5	-	-	10S	176E
-0439	Feb 02	06:13:04	16061	408	-30166	36	P	-a	-0.7783	1.4326	0.4273	292.2	139.6	-	18N	22W
-0439	Jul 28	08:20:24	16053	408	-30160	41	P	-h	0.8649	1.2706	0.2716	282.7	115.1	-	20S	58W
-0438	Jan 22	14:13:36	16045	408	-30154	46	T-	pp	-0.0766	2.7503	1.6851	362.5	228.5	102.1	21N	143W
-0438	Jul 17	22:28:17	16037	408	-30148	51	T+	pp	0.0944	2.6610	1.7080	320.3	212.1	97.8	22S	90E
-0437	Jan 11	15:12:32	16029	408	-30142	56	P	t-	0.6321	1.7492	0.6482	347.3	180.5	-	23N	158W
-0437	Jul 07	15:32:07	16021	407	-30136	61	P	a-	-0.6350	1.6656	0.7195	290.4	166.7	-	24S	167W
-0437	Dec 31	14:51:58	16013	407	-30130	66	N	h-	1.2954	0.5240	-0.5611	212.3	-	-	25N	155W
-0436	May 27	21:19:16	16007	407	-30125	33	N	-h	1.2052	0.6499	-0.3567	219.7	-	-	19S	105E
-0436	Jun 26	06:50:36	16006	407	-30124	71	N	h-	-1.4127	0.2563	-0.7246	138.5	-	-	25S	37W
-0436	Nov 20	07:02:50	15999	407	-30119	38	P	-a	-0.9036	1.2020	0.1982	271.5	97.2	-	18N	41W
-0435	May 17	03:08:04	15991	407	-30113	43	P	-t	0.4671	2.0292	0.9732	352.1	206.6	-	17S	18E
-0435	Nov 09	21:34:26	15983	406	-30107	48	T-	-p	-0.2129	2.4531	1.4814	316.9	206.0	87.7	16N	100E
-0434	May 06	03:54:32	15975	406	-30101	53	T	tp	-0.2970	2.3474	1.2795	367.3	225.1	80.0	15S	6E
-0434	Oct 30	13:04:09	15968	406	-30095	58	T	p-	0.4599	2.0066	1.0217	311.3	190.2	22.0	13N	133W
-0433	Apr 25	06:49:07	15960	406	-30089	63	N	t-	-1.0411	0.9643	-0.0687	266.9	-	-	12S	37W
-0433	Oct 20	00:51:47	15952	406	-30083	68	N	h-	1.1953	0.6820	-0.3522	224.9	-	-	9N	50E
-0432	Mar 15	07:57:27	15945	406	-30078	35	P	-a	0.8712	1.2419	0.2768	267.9	111.8	-	5N	50W
-0432	Sep 08	12:06:34	15937	405	-30072	40	Nx	-t	-1.0009	1.0667	-0.0227	291.9	-	-	9S	115W
-0431	Mar 05	00:23:15	15930	405	-30066	45	T+	-p	0.1530	2.5541	1.5998	316.9	208.9	93.8	8N	64E
-0431	Aug 28	12:08:12	15922	405	-30060	50	T	pp	-0.2780	2.3843	1.3122	364.2	223.6	82.4	12S	115W
-0430	Feb 22	15:47:43	15914	405	-30054	55	P	a-	-0.5705	1.8049	0.8173	308.4	179.3	-	12N	167W
-0430	Aug 17	17:36:44	15906	405	-30048	60	P	a-	0.4669	2.0099	0.9926	330.4	197.9	-	15S	163E
-0429	Jan 13	09:52:33	15900	405	-30043	27	N	-t	1.5572	0.0419	-1.0396	62.6	-	-	24N	78W
-0429	Feb 12	01:42:23	15898	405	-30042	65	N	t-	-1.3479	0.4084	-0.6382	183.0	-	-	14N	45E
-0429	Jul 08	22:38:18	15892	404	-30037	32	N	-a	-1.3713	0.3142	-0.6311	145.8	-	-	25S	87E
-0429	Aug 07	06:19:51	15891	404	-30036	70	N	a-	1.1649	0.7029	-0.2618	213.6	-	-	17S	28W
-0428	Jan 02	09:36:52	15884	404	-30031	37	P	-t	0.9046	1.2503	0.1470	311.3	93.0	-	24N	76W
-0428	Jun 27	15:43:59	15876	404	-30025	42	P	-a	-0.6605	1.6216	0.6701	290.5	163.3	-	24S	171W
-0428	Dec 21	10:18:20	15868	404	-30019	47	T+	pp	0.2019	2.5241	1.4514	361.1	224.3	92.3	24N	88W
-0427	Jun 17	05:47:53	15861	404	-30013	52	T+	pp	0.0915	2.6877	1.6925	340.1	221.0	100.7	23S	22W
-0427	Dec 10	17:46:07	15853	404	-30007	57	P	a-	-0.4961	1.9558	0.9396	321.0	190.2	-	22N	159E
-0426	Jun 06	13:08:14	15845	403	-30001	62	P	t-	0.8983	1.2336	0.1864	299.2	102.0	-	21S	133W
-0426	Oct 31	20:45:41	15839	403	-29996	29	N	-a	1.5330	0.0301	-0.9398	46.4	-	-	14N	111E
-0426	Nov 30	07:24:54	15837	403	-29995	67	N	a-	-1.1368	0.7601	-0.2160	218.8	-	-	20N	47W
-0425	Apr 26	23:46:10	15831	403	-29990	34	N	-t	-1.1675	0.7476	-0.3155	249.2	-	-	13S	68E

-0425	Oct 21	11:42:26	15823	403	-29984	39	P	-a	0.9107	1.1848	0.1892	268.4	94.7	-	10N	113W
-0424	Apr 15	04:21:43	15815	403	-29978	44	T	-p	-0.3698	2.1892	1.1700	340.2	209.9	62.2	8S	0E
-0424	Oct 09	21:46:29	15808	403	-29972	49	T+	-p	0.2335	2.4543	1.4052	351.1	219.6	88.1	5N	97E
-0423	Apr 04	16:04:00	15800	402	-29966	54	T	a-	0.3969	2.1141	1.1452	316.4	198.7	55.5	3S	174W
-0423	Sep 29	00:39:58	15792	402	-29960	59	P	t-	-0.4837	2.0164	0.9252	357.5	204.4	-	0S	54E
-0422	Feb 24	00:09:55	15786	402	-29955	26	N	-a	-1.4600	0.1597	-0.8017	106.0	-	-	10N	67E
-0422	Mar 25	08:19:39	15784	402	-29954	64	N	a-	1.0996	0.8142	-0.1339	222.9	-	-	2N	57W
-0422	Sep 18	00:08:16	15777	402	-29948	69	N	t-	-1.1775	0.7410	-0.3454	250.0	-	-	5S	63E
-0421	Feb 13	14:20:22	15770	402	-29943	36	P	-a	-0.8080	1.3781	0.3727	289.3	131.9	-	14N	145W
-0421	Aug 08	15:49:17	15763	402	-29937	41	P	-a	0.9182	1.1725	0.1740	273.6	93.1	-	17S	171W
-0420	Feb 02	22:03:19	15755	401	-29931	46	T-	pp	-0.1016	2.7043	1.6394	363.1	228.6	101.3	18N	99E
-0420	Jul 28	06:08:22	15747	401	-29925	51	T+	-p	0.1546	2.5510	1.5973	318.8	210.2	94.3	20S	26W
-0419	Jan 21	22:54:52	15739	401	-29919	56	P	t-	0.6122	1.7844	0.6858	349.1	184.6	-	21N	86E
-0419	Jul 17	23:06:56	15732	401	-29913	61	P	a-	-0.5709	1.7848	0.8356	296.7	176.4	-	23S	79E
-0418	Jan 10	22:50:48	15724	401	-29907	66	N	h-	1.2805	0.5490	-0.5314	216.1	-	-	24N	86E
-0418	Jun 08	04:12:32	15718	401	-29902	33	N	-h	1.2880	0.5000	-0.5105	196.4	-	-	21S	1E
-0418	Jul 07	14:03:41	15716	400	-29901	71	N	h-	-1.3478	0.3779	-0.6080	167.0	-	-	25S	146W
-0418	Dec 01	15:47:28	15710	400	-29896	38	P	-a	-0.9017	1.2042	0.2029	270.8	98.1	-	21N	173W
-0417	May 28	09:32:52	15702	400	-29890	43	P	-t	0.5563	1.8665	0.8087	345.8	194.4	-	20S	80W
-0417	Nov 21	06:27:42	15695	400	-29884	48	T-	-p	-0.2144	2.4504	1.4784	316.8	205.8	87.5	19N	34W
-0416	May 16	10:16:12	15687	400	-29878	53	T-	pp	-0.2089	2.5078	1.4419	370.1	230.4	94.4	18S	91W
-0416	Nov 09	21:49:09	15679	400	-29872	58	T	p-	0.4568	2.0138	1.0256	312.4	190.8	23.9	16N	95E
-0415	May 05	13:36:40	15672	399	-29866	63	P	t-	-0.9606	1.1097	0.0815	280.6	67.1	-	15S	141W
-0415	Oct 30	09:13:48	15664	399	-29860	68	N	h-	1.1911	0.6924	-0.3469	227.3	-	-	13N	77W
-0414	Mar 26	15:43:30	15658	399	-29855	35	P	-a	0.9218	1.1466	0.1862	259.3	92.8	-	1N	168W
-0414	Sep 19	19:28:32	15650	399	-29849	40	N	-t	-1.0385	0.9996	-0.0939	285.1	-	-	4S	133E
-0413	Mar 16	08:22:35	15642	399	-29843	45	T+	-p	0.1996	2.4675	1.5155	315.8	207.4	90.1	4N	57W
-0413	Sep 08	19:29:40	15635	399	-29837	50	T	-p	-0.3211	2.3059	1.2325	361.7	219.9	73.1	8S	133E
-0412	Mar 04	23:43:34	15627	398	-29831	55	P	a-	-0.5314	1.8765	0.8892	312.5	185.3	-	8N	73E
-0412	Aug 28	01:15:14	15620	398	-29825	60	T	a-	0.4193	2.0972	1.0801	332.3	202.4	43.3	12S	46E
-0411	Jan 23	17:44:18	15613	398	-29820	27	Ne	-t	1.5790	0.0016	-1.0794	12.4	-	-	22N	163E
-0411	Feb 22	09:23:27	15612	398	-29819	65	N	t-	-1.3165	0.4660	-0.5805	195.0	-	-	11N	72W
-0411	Jul 19	06:14:58	15606	398	-29814	32	N	-a	-1.4319	0.2035	-0.7428	118.4	-	-	24S	28W
-0411	Aug 17	14:10:08	15604	398	-29813	70	N	a-	1.1127	0.7988	-0.1665	225.1	-	-	14S	147W
-0410	Jan 12	17:26:02	15598	398	-29808	37	P	-t	0.9192	1.2221	0.1216	308.4	84.8	-	23N	167E
-0410	Jul 08	23:11:45	15590	398	-29802	42	P	-a	-0.7305	1.4949	0.5400	284.0	149.9	-	24S	77E
-0409	Jan 01	18:28:31	15583	397	-29796	47	T+	pp	0.2092	2.5086	1.4404	359.4	223.5	91.4	24N	150E
-0409	Jun 28	12:50:24	15575	397	-29790	52	T+	pp	0.0154	2.8297	1.8298	342.4	222.6	102.7	24S	129W
-0409	Dec 22	02:23:11	15568	397	-29784	57	P	a-	-0.4922	1.9610	0.9488	320.0	190.3	-	23N	30E
-0408	Jun 16	19:40:40	15560	397	-29778	62	P	t-	0.8170	1.3845	0.3338	312.7	133.9	-	23S	128E

## 4TH CENTURY BCE

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															

-0399 Jun 07	15:58:27	15421	394	-29667	43	P	-t	0.6440	1.7065	0.6466	338.2	179.0	-	22S	177W
-0399 Dec 01	15:21:35	15414	394	-29661	48	T-	-p	-0.2156	2.4482	1.4764	316.6	205.7	87.4	21N	168W
-0398 May 27	16:37:39	15406	393	-29655	53	T-	pp	-0.1202	2.6698	1.6057	371.6	233.7	102.7	20S	173E
-0398 Nov 21	06:36:00	15399	393	-29649	58	T	p-	0.4557	2.0173	1.0264	313.4	191.2	24.3	20N	38W
-0397 May 16	20:23:14	15391	393	-29643	63	P	t-	-0.8780	1.2589	0.2352	292.7	111.1	-	18S	116E
-0397 Nov 10	17:38:40	15384	393	-29637	68	N	h-	1.1895	0.6976	-0.3462	228.9	-	-	17N	156E
-0396 Apr 05	23:22:26	15377	393	-29632	35	P	-a	0.9791	1.0393	0.0833	249.1	62.8	-	3S	75E
-0396 Sep 30	03:00:37	15370	393	-29626	40	N	-t	-1.0680	0.9474	-0.1498	279.4	-	-	0S	18E
-0395 Mar 26	16:13:48	15363	392	-29620	45	T+	-p	0.2532	2.3682	1.4181	314.3	205.2	84.4	0N	177W
-0395 Sep 19	03:01:40	15355	392	-29614	50	T	-p	-0.3563	2.2417	1.1674	359.2	216.4	63.3	4S	18E
-0394 Mar 16	07:29:46	15348	392	-29608	55	P	a-	-0.4849	1.9618	0.9745	316.9	191.6	-	4N	46W
-0394 Sep 08	09:04:08	15340	392	-29602	60	T	a-	0.3792	2.1708	1.1537	333.6	205.5	58.5	8S	73W
-0393 Mar 05	16:52:09	15333	392	-29596	65	N	t-	-1.2760	0.5401	-0.5061	209.1	-	-	7N	174E
-0393 Jul 30	13:57:00	15327	392	-29591	32	N	-a	-1.4885	0.1007	-0.8474	84.0	-	-	22S	144W
-0393 Aug 28	22:09:18	15325	392	-29590	70	N	a-	1.0674	0.8826	-0.0838	234.1	-	-	11S	91E
-0392 Jan 24	01:08:10	15319	391	-29585	37	P	-t	0.9396	1.1829	0.0860	304.2	71.6	-	21N	51E
-0392 Jul 19	06:43:14	15312	391	-29579	42	P	-a	-0.7969	1.3752	0.4162	277.1	134.4	-	23S	36W
-0391 Jan 12	02:34:44	15304	391	-29573	47	T+	pp	0.2206	2.4851	1.4220	357.5	222.5	90.1	23N	28E
-0391 Jul 08	19:55:15	15297	391	-29567	52	T-	pp	-0.0579	2.7542	1.7491	343.9	222.8	102.1	23S	125E
-0390 Jan 01	10:58:59	15290	391	-29561	57	P	a-	-0.4865	1.9693	0.9615	319.1	190.7	-	23N	99W
-0390 Jun 28	02:12:24	15282	391	-29555	62	P	t-	0.7355	1.5360	0.4815	324.7	157.5	-	23S	30E
-0390 Nov 22	14:29:11	15276	390	-29550	29	N	-a	1.5381	0.0219	-0.9506	39.6	-	-	21N	156W
-0390 Dec 22	01:08:21	15275	390	-29549	67	N	a-	-1.1315	0.7682	-0.2046	219.2	-	-	23N	47E
-0389 May 18	12:42:28	15269	390	-29544	34	N	-t	-1.3277	0.4505	-0.6061	198.0	-	-	19S	129W
-0389 Jun 17	03:08:59	15268	390	-29543	72	N	t-	1.4989	0.1424	-0.9261	116.1	-	-	22S	15E
-0389 Nov 12	05:00:25	15261	390	-29538	39	P	-a	0.9240	1.1644	0.1608	268.5	88.1	-	17N	15W
-0388 May 06	18:18:28	15254	390	-29532	44	P	-t	-0.5155	1.9165	0.9077	327.2	193.0	-	16S	147E
-0388 Oct 31	14:10:10	15247	390	-29526	49	T+	-p	0.2554	2.4194	1.3598	353.6	219.3	84.7	13N	152W
-0387 Apr 26	06:59:42	15239	390	-29520	54	T+	p-	0.2636	2.3541	1.3942	320.0	207.6	83.8	11S	42W
-0387 Oct 20	16:09:25	15232	389	-29514	59	P	t-	-0.4459	2.0898	0.9906	362.1	209.3	-	8N	178E
-0386 Apr 15	23:43:52	15225	389	-29508	64	P	a-	0.9824	1.0271	0.0833	244.7	62.2	-	7S	68E
-0386 Oct 09	15:27:17	15217	389	-29502	69	N	t-	-1.1238	0.8409	-0.2483	263.0	-	-	3N	170W
-0385 Mar 07	06:05:27	15211	389	-29497	36	P	-a	-0.8894	1.2289	0.2235	279.7	105.1	-	7N	25W
-0385 Aug 30	07:14:36	15204	389	-29491	41	P	-a	1.0047	1.0136	0.0154	257.1	28.1	-	10S	45W
-0384 Feb 24	13:14:49	15196	389	-29485	46	T-	pp	-0.1724	2.5739	1.5101	363.4	227.5	96.6	11N	131W
-0384 Aug 18	21:49:55	15189	388	-29479	51	T+	-p	0.2580	2.3627	1.4063	315.3	205.1	83.6	15S	96E
-0383 Feb 12	13:54:49	15182	388	-29473	56	P	t-	0.5517	1.8923	0.8000	354.1	195.5	-	16N	141W
-0383 Aug 08	14:32:07	15175	388	-29467	61	T	a-	-0.4564	1.9988	1.0419	306.6	190.4	30.4	18S	154W
-0382 Feb 01	14:31:54	15167	388	-29461	66	N	h-	1.2349	0.6274	-0.4423	227.6	-	-	20N	150W



-0382	Jun 29	17:58:12	15161	388	-29456	33	N	-h	1.4503	0.2069	-0.8128	131.0	-	-	22S	153E
-0382	Jul 29	04:40:41	15160	388	-29455	71	N	h-	-1.2283	0.6027	-0.3943	208.4	-	-	22S	6W
-0382	Dec 23	09:15:01	15154	388	-29450	38	P	-a	-0.9013	1.2016	0.2067	268.9	98.5	-	23N	75W
-0381	Jun 18	22:22:40	15147	387	-29444	43	P	-t	0.7318	1.5469	0.4843	329.1	159.3	-	23S	86E
-0381	Dec 13	00:15:32	15139	387	-29438	48	T-	-p	-0.2167	2.4458	1.4746	316.5	205.6	87.3	23N	59E
-0380	Jun 06	22:59:01	15132	387	-29432	53	T-	pp	-0.0310	2.8328	1.7699	371.9	235.1	106.2	22S	76E
-0380	Dec 01	15:24:29	15125	387	-29426	58	T	p-	0.4567	2.0166	1.0233	314.2	191.4	22.9	22N	170W
-0379	May 27	03:09:58	15117	387	-29420	63	P	h-	-0.7943	1.4106	0.3908	303.2	139.5	-	21S	13E
-0379	Nov 21	02:05:53	15110	387	-29414	68	N	h-	1.1906	0.6975	-0.3502	229.8	-	-	20N	29E
-0378	Apr 17	06:57:07	15104	386	-29409	35	N	-a	1.0402	0.9252	-0.0269	237.3	-	-	7S	41W
-0378	May 16	14:32:34	15103	386	-29408	73	Nb	a-	-1.4960	0.0964	-0.8706	84.9	-	-	19S	158W
-0378	Oct 11	10:40:32	15097	386	-29403	40	N	-t	-1.0909	0.9071	-0.1935	274.9	-	-	4N	99W
-0377	Apr 06	23:57:11	15090	386	-29397	45	T	-p	0.3131	2.2577	1.3090	312.2	201.9	75.5	4S	65E
-0377	Sep 30	10:43:37	15082	386	-29391	50	T	-p	-0.3840	2.1914	1.1162	356.9	213.3	53.5	0N	100W
-0376	Mar 26	15:07:17	15075	386	-29385	55	T	p-	-0.4321	2.0589	1.0713	321.4	197.9	40.3	1S	162W
-0376	Sep 18	17:02:29	15068	386	-29379	60	T	a-	0.3462	2.2312	1.2143	334.2	207.7	67.4	3S	166E
-0375	Mar 16	00:11:51	15061	385	-29373	65	N	t-	-1.2289	0.6265	-0.4197	224.0	-	-	3N	62E
-0375	Aug 09	21:46:39	15055	385	-29368	32	Ne	-a	-1.5391	0.0089	-0.9412	25.2	-	-	19S	97E
-0375	Sep 08	06:17:14	15053	385	-29367	70	N	a-	1.0290	0.9536	-0.0141	241.1	-	-	7S	32W
-0374	Feb 03	08:43:05	15047	385	-29362	37	P	-t	0.9659	1.1326	0.0396	298.7	48.9	-	19N	63W
-0374	Jul 30	14:19:03	15040	385	-29356	42	P	-a	-0.8590	1.2634	0.2998	269.9	116.3	-	21S	151W
-0373	Jan 23	10:35:17	15033	385	-29350	47	T+	pp	0.2375	2.4512	1.3938	355.3	221.2	87.9	21N	92W
-0373	Jul 20	03:03:32	15026	385	-29344	52	T-	pp	-0.1277	2.6292	1.6183	344.8	222.0	99.0	22S	17E
-0372	Jan 12	19:28:35	15019	384	-29338	57	P	a-	-0.4748	1.9882	0.9853	318.5	191.7	-	22N	133E
-0372	Jul 08	08:48:18	15011	384	-29332	62	P	t-	0.6576	1.6810	0.6223	335.0	175.5	-	23S	70W
-0372	Dec 02	23:22:53	15005	384	-29327	29	N	-a	1.5398	0.0191	-0.9540	37.0	-	-	23N	70E
-0371	Jan 01	09:55:40	15004	384	-29326	67	N	a-	-1.1249	0.7792	-0.1914	220.2	-	-	22N	85W
-0371	May 28	19:09:40	14998	384	-29321	34	N	-t	-1.4086	0.3007	-0.7533	163.6	-	-	22S	133E
-0371	Jun 27	09:32:12	14997	384	-29320	72	N	t-	1.4149	0.2967	-0.7723	165.1	-	-	22S	82W
-0371	Nov 22	13:42:33	14991	384	-29315	39	P	-a	0.9275	1.1598	0.1528	269.0	86.2	-	20N	146W
-0370	May 18	01:14:32	14984	384	-29309	44	P	-t	-0.5918	1.7743	0.7701	319.1	181.5	-	19S	42E
-0370	Nov 11	22:28:16	14977	383	-29303	49	T+	-p	0.2600	2.4131	1.3492	354.9	219.4	84.0	17N	82E
-0369	May 07	14:21:02	14969	383	-29297	54	T+	p-	0.1905	2.4863	1.5300	321.2	210.8	92.1	15S	154W
-0369	Nov 01	00:04:15	14962	383	-29291	59	T	t-	-0.4357	2.1102	1.0079	363.5	210.6	14.7	13N	58E
-0368	Apr 26	07:17:25	14955	383	-29285	64	P	a-	0.9167	1.1470	0.2046	255.2	95.9	-	11S	48W
-0368	Oct 19	23:19:45	14948	383	-29279	69	N	t-	-1.1065	0.8731	-0.2168	266.7	-	-	8N	70E
-0367	Mar 17	13:43:27	14942	383	-29274	36	P	-a	-0.9408	1.1347	0.1290	272.5	81.2	-	2N	141W
-0367	Sep 09	15:12:14	14935	382	-29268	41	N	-a	1.0371	0.9543	-0.0440	250.3	-	-	6S	167W
-0366	Mar 06	20:35:47	14928	382	-29262	46	T-	-p	-0.2188	2.4883	1.4254	362.9	226.0	91.7	7N	117E
-0366	Aug 30	05:52:11	14920	382	-29256	51	T	-p	0.3004	2.2857	1.3274	313.5	202.3	77.1	11S	26W

-0365 Feb 23	21:12:07	14913	382	-29250	56	P	t-	0.5110	1.9651	0.8764	357.1	201.8	-	12N	109E
-0365 Aug 19	22:24:32	14906	382	-29244	61	T	p-	-0.4081	2.0896	1.1282	310.4	195.2	51.8	15S	87E
-0364 Feb 12	22:11:38	14899	382	-29238	66	N	h-	1.2023	0.6841	-0.3796	235.4	-	-	16N	94E
-0364 Jul 10	00:54:14	14893	381	-29233	33	Ne	-h	1.5266	0.0696	-0.9554	77.3	-	-	22S	48E
-0364 Aug 08	12:07:25	14892	381	-29232	71	N	h-	-1.1764	0.7010	-0.3022	223.6	-	-	19S	119W
-0363 Jan 02	17:55:23	14886	381	-29227	38	P	-a	-0.9045	1.1939	0.2029	267.4	97.4	-	23N	155E
-0363 Jun 29	04:49:50	14879	381	-29221	43	P	-t	0.8163	1.3932	0.3277	318.6	134.5	-	23S	11W
-0363 Dec 23	09:06:41	14872	381	-29215	48	T-	-p	-0.2201	2.4390	1.4689	316.3	205.5	86.9	23N	74W
-0362 Jun 18	05:23:33	14865	381	-29209	53	T+	pp	0.0559	2.7866	1.7247	371.1	234.5	105.5	23S	20W
-0362 Dec 13	00:11:00	14857	381	-29203	58	T	p-	0.4565	2.0179	1.0229	315.1	191.7	22.8	24N	58E
-0361 Jun 07	09:58:02	14850	380	-29197	63	P	h-	-0.7103	1.5630	0.5466	312.1	160.5	-	23S	90W
-0361 Dec 02	10:32:50	14843	380	-29191	68	N	h-	1.1923	0.6960	-0.3548	230.4	-	-	23N	98W
-0360 Apr 27	14:26:56	14837	380	-29186	35	N	-a	1.1057	0.8033	-0.1455	223.4	-	-	11S	155W
-0360 May 26	21:47:35	14836	380	-29185	73	N	a-	-1.4188	0.2366	-0.7273	130.8	-	-	22S	92E
-0360 Oct 21	18:27:18	14830	380	-29180	40	N	-t	-1.1080	0.8769	-0.2262	271.3	-	-	9N	142E
-0359 Apr 17	07:34:24	14823	380	-29174	45	T	-a	0.3779	2.1383	1.1905	309.4	197.4	61.8	8S	52W
-0359 Oct 10	18:35:33	14816	380	-29168	50	T	-p	-0.4039	2.1551	1.0795	354.9	210.8	44.7	5N	141E
-0358 Apr 06	22:35:13	14809	379	-29162	55	T	p-	-0.3720	2.1695	1.1812	326.0	204.1	62.3	5S	83E
-0358 Sep 30	01:10:52	14802	379	-29156	60	T	p-	0.3207	2.2780	1.2612	334.4	209.0	73.0	1N	42E
-0357 Mar 27	07:20:05	14795	379	-29150	65	N	t-	-1.1734	0.7283	-0.3179	239.8	-	-	1S	47W
-0357 Sep 19	14:34:29	14788	379	-29144	70	P	a-	0.9978	1.0115	0.0425	246.5	45.0	-	3S	159W
-0356 Feb 14	16:08:31	14782	379	-29139	37	Nx	-t	1.0002	1.0675	-0.0210	291.4	-	-	16N	176W
-0356 Aug 09	22:01:26	14775	379	-29133	42	P	-a	-0.9153	1.1627	0.1941	262.8	95.2	-	18S	92E
-0355 Feb 02	18:30:17	14768	378	-29127	47	T+	-p	0.2600	2.4068	1.3554	352.7	219.4	84.6	18N	149E
-0355 Jul 30	10:15:22	14761	378	-29121	52	T-	-p	-0.1934	2.5116	1.4946	345.1	220.2	93.6	20S	92W
-0354 Jan 23	03:54:34	14754	378	-29115	57	T	a-	-0.4595	2.0138	1.0160	318.2	193.1	19.3	20N	7E
-0354 Jul 19	15:26:57	14747	378	-29109	62	P	t-	0.5821	1.8217	0.7586	343.8	189.7	-	22S	170W
-0354 Dec 14	08:16:24	14741	378	-29104	29	N	-a	1.5416	0.0159	-0.9574	33.9	-	-	25N	63W
-0353 Jan 12	18:39:03	14740	378	-29103	67	N	a-	-1.1153	0.7954	-0.1726	221.9	-	-	21N	144E
-0353 Jun 09	01:37:22	14734	378	-29098	34	N	-t	-1.4892	0.1517	-0.9000	117.4	-	-	24S	35E
-0353 Jul 08	15:59:13	14733	378	-29097	72	N	t-	1.3331	0.4472	-0.6226	199.8	-	-	22S	179W
-0353 Dec 03	22:25:20	14727	377	-29092	39	P	-a	0.9298	1.1569	0.1471	269.6	84.8	-	23N	83E
-0352 May 28	08:12:02	14720	377	-29086	44	P	-t	-0.6676	1.6332	0.6328	310.2	167.8	-	21S	64W
-0352 Nov 22	06:46:36	14713	377	-29080	49	T+	-p	0.2637	2.4081	1.3406	356.1	219.7	83.4	20N	43W
-0351 May 17	21:43:02	14706	377	-29074	54	T+	p-	0.1173	2.6191	1.6658	321.7	212.7	97.3	18S	94E
-0351 Nov 11	08:02:21	14699	377	-29068	59	T	t-	-0.4280	2.1253	1.0208	364.6	211.6	23.7	16N	62W
-0350 May 07	14:47:19	14692	377	-29062	64	P	a-	0.8480	1.2726	0.3309	265.2	119.8	-	14S	162W
-0350 Oct 31	07:18:53	14685	376	-29056	69	N	t-	-1.0939	0.8963	-0.1937	269.1	-	-	12N	51W
-0349 Mar 28	21:11:22	14679	376	-29051	36	P	-a	-0.9996	1.0271	0.0209	263.2	33.3	-	2S	105E
-0349 Sep 20	23:19:58	14672	376	-29045	41	N	-a	1.0618	0.9090	-0.0893	244.8	-	-	2S	70E

-0348	Mar 17	03:44:19	14665	376	-29039	46	T	-p	-0.2745	2.3857	1.3234	361.6	223.2	83.4	3N	8E
-0348	Sep 09	14:04:33	14658	376	-29033	51	T	-p	0.3346	2.2240	1.2637	311.9	199.7	70.6	7S	151W
-0347	Mar 06	04:18:59	14651	376	-29027	56	P	t-	0.4618	2.0535	0.9686	360.3	208.6	-	8N	0E
-0347	Aug 30	06:24:21	14644	375	-29021	61	T	p-	-0.3666	2.1682	1.2022	313.7	198.9	63.6	11S	35W
-0346	Feb 23	05:43:30	14637	375	-29015	66	N	h-	1.1625	0.7540	-0.3035	244.4	-	-	13N	20W
-0346	Aug 19	19:39:49	14630	375	-29009	71	N	h-	-1.1300	0.7895	-0.2202	236.3	-	-	16S	127E
-0345	Jan 14	02:30:43	14624	375	-29004	38	P	-a	-0.9125	1.1769	0.1903	265.2	94.3	-	21N	26E
-0345	Jul 10	11:18:43	14617	375	-28998	43	P	-t	0.8988	1.2436	0.1747	306.8	100.6	-	22S	109W
-0344	Jan 03	17:54:46	14610	375	-28992	48	T-	-p	-0.2262	2.4272	1.4585	316.0	205.3	86.4	23N	154E
-0344	Jun 28	11:51:30	14604	374	-28986	53	T+	pp	0.1407	2.6308	1.5694	369.1	232.1	100.9	24S	118W
-0344	Dec 23	08:55:03	14597	374	-28980	58	T	p-	0.4548	2.0217	1.0254	316.1	192.3	24.0	24N	72W
-0343	Jun 17	16:49:35	14590	374	-28974	63	P	h-	-0.6280	1.7126	0.6991	319.5	176.5	-	24S	167E
-0343	Dec 12	18:59:16	14583	374	-28968	68	N	h-	1.1943	0.6936	-0.3598	230.9	-	-	24N	135E
-0342	May 08	21:53:18	14577	374	-28963	35	N	-a	1.1744	0.6758	-0.2701	207.1	-	-	15S	91E
-0342	Jun 07	05:02:30	14576	374	-28962	73	N	a-	-1.3405	0.3788	-0.5824	162.8	-	-	24S	17W
-0342	Nov 02	02:20:37	14570	374	-28957	40	N	-t	-1.1199	0.8563	-0.2489	268.8	-	-	13N	23E
-0341	Apr 28	15:06:07	14563	373	-28951	45	T	-a	0.4469	2.0114	1.0640	305.8	191.4	37.3	12S	167W
-0341	Oct 22	02:35:24	14556	373	-28945	50	T	-p	-0.4182	2.1287	1.0532	353.1	208.8	36.8	9N	19E
-0340	Apr 17	05:55:58	14549	373	-28939	55	T	p-	-0.3066	2.2900	1.3006	330.3	209.8	77.3	9S	29W
-0340	Oct 10	09:27:51	14542	373	-28933	60	T	p-	0.3015	2.3130	1.2967	334.2	209.7	76.7	5N	84W
-0339	Apr 06	14:20:54	14535	373	-28927	65	N	t-	-1.1122	0.8407	-0.2057	255.5	-	-	6S	154W
-0339	Sep 29	22:58:45	14529	373	-28921	70	P	a-	0.9721	1.0594	0.0891	250.6	64.6	-	2N	74E
-0338	Feb 24	23:26:17	14523	372	-28916	37	N	-t	1.0408	0.9906	-0.0933	282.3	-	-	12N	74E
-0338	Aug 21	05:50:02	14516	372	-28910	42	P	-a	-0.9661	1.0722	0.0983	255.8	68.8	-	15S	26W
-0337	Feb 14	02:16:32	14509	372	-28904	47	T	-p	0.2905	2.3475	1.3026	349.7	217.0	79.5	15N	31E
-0337	Aug 10	17:33:24	14502	372	-28898	52	T-	-p	-0.2532	2.4052	1.3818	345.0	217.7	86.2	18S	158E
-0336	Feb 03	12:12:31	14495	372	-28892	57	T	a-	-0.4368	2.0526	1.0604	318.3	195.2	36.8	18N	118W
-0336	Jul 29	22:12:34	14488	372	-28886	62	P	t-	0.5128	1.9513	0.8835	351.1	200.6	-	20S	88E
-0336	Dec 24	17:05:57	14483	372	-28881	29	N	-a	1.5468	0.0062	-0.9668	21.1	-	-	25N	165E
-0335	Jan 23	03:15:06	14482	371	-28880	67	N	a-	-1.0998	0.8225	-0.1427	224.8	-	-	19N	15E
-0335	Jun 19	08:09:13	14476	371	-28875	34	Ne	-t	-1.5667	0.0085	-1.0415	28.1	-	-	25S	63W
-0335	Jul 18	22:33:40	14475	371	-28874	72	N	t-	1.2562	0.5888	-0.4822	226.0	-	-	21S	82E
-0335	Dec 14	07:06:42	14469	371	-28869	39	P	-a	0.9330	1.1521	0.1401	270.0	83.1	-	24N	47W
-0334	Jun 08	15:09:49	14462	371	-28863	44	P	-t	-0.7442	1.4910	0.4941	300.1	151.0	-	23S	169W
-0334	Dec 03	15:06:34	14455	371	-28857	49	T+	-p	0.2655	2.4064	1.3360	357.3	220.1	83.1	22N	168W
-0333	May 29	05:02:52	14448	371	-28851	54	T+	pp	0.0414	2.7571	1.8063	321.6	213.6	99.8	21S	18W
-0333	Nov 22	16:04:07	14442	371	-28845	59	T	t-	-0.4236	2.1342	1.0283	365.3	212.2	27.5	19N	177E
-0332	May 17	22:13:37	14435	370	-28839	64	P	a-	0.7763	1.4041	0.4625	274.5	139.0	-	18S	85E
-0332	Nov 10	15:24:53	14428	370	-28833	69	N	t-	-1.0859	0.9106	-0.1788	270.3	-	-	15N	174W
-0331	Apr 08	04:31:21	14422	370	-28828	36	N	-a	-1.0637	0.9098	-0.0973	251.7	-	-	6S	7W

-0331 May 07	14:03:24	14421	370	-28827	74	Nb	a-	1.5504	0.0007	-0.9743	7.3	-	-	14S	152W
-0331 Oct 01	07:36:00	14415	370	-28822	41	N	-a	1.0805	0.8746	-0.1238	240.3	-	-	2N	56W
-0330 Mar 28	10:44:41	14409	370	-28816	46	T	-t	-0.3362	2.2721	1.2106	359.6	219.1	70.3	1S	100W
-0330 Sep 20	22:24:10	14402	370	-28810	51	T	-p	0.3629	2.1732	1.2107	310.5	197.4	64.1	3S	83E
-0329 Mar 17	11:16:56	14395	369	-28804	56	T	t-	0.4051	2.1554	1.0745	363.5	215.2	44.2	4N	106W
-0329 Sep 10	14:31:23	14388	369	-28798	61	T	p-	-0.3316	2.2349	1.2639	316.4	201.7	71.2	7S	158W
-0328 Mar 05	13:08:13	14381	369	-28792	66	N	h-	1.1162	0.8358	-0.2153	254.1	-	-	9N	133W
-0328 Aug 30	03:19:04	14374	369	-28786	71	N	h-	-1.0898	0.8666	-0.1496	246.8	-	-	12S	11E
-0327 Jan 24	11:00:13	14369	369	-28781	38	P	-a	-0.9258	1.1503	0.1682	262.1	88.7	-	19N	101W
-0327 Jul 20	17:53:59	14362	369	-28775	43	P	-t	0.9753	1.1050	0.0327	294.2	44.4	-	21S	152E
-0326 Jan 14	02:37:30	14355	368	-28769	48	T-	-p	-0.2365	2.4073	1.4404	315.6	204.9	85.3	22N	24E
-0326 Jul 09	18:24:35	14348	368	-28763	53	T+	pp	0.2216	2.4822	1.4210	366.2	228.1	92.3	23S	144E
-0325 Jan 03	17:34:15	14342	368	-28757	58	T	p-	0.4499	2.0310	1.0339	317.3	193.3	27.7	24N	158E
-0325 Jun 28	23:46:03	14335	368	-28751	63	P	h-	-0.5488	1.8566	0.8454	325.2	188.6	-	24S	62E
-0325 Dec 24	03:20:38	14328	368	-28745	68	N	h-	1.1933	0.6964	-0.3589	232.1	-	-	25N	10E
-0324 May 19	05:17:51	14322	368	-28740	35	N	-a	1.2447	0.5458	-0.3981	188.2	-	-	17S	21W
-0324 Jun 17	12:20:50	14321	368	-28739	73	N	a-	-1.2644	0.5174	-0.4419	187.2	-	-	25S	127W
-0324 Nov 12	10:18:33	14316	367	-28734	40	N	-t	-1.1274	0.8430	-0.2633	267.1	-	-	16N	98W
-0323 May 08	22:33:17	14309	367	-28728	45	P	-a	0.5194	1.8786	0.9309	301.4	183.7	-	15S	80E
-0323 Nov 01	10:42:17	14302	367	-28722	50	T	-p	-0.4272	2.1118	1.0370	351.6	207.3	30.7	13N	104W
-0322 Apr 28	13:09:00	14295	367	-28716	55	T-	pp	-0.2359	2.4205	1.4296	334.4	214.7	88.4	13S	139W
-0322 Oct 21	17:53:27	14289	367	-28710	60	T	p-	0.2887	2.3361	1.3205	333.6	210.0	78.8	10N	148E
-0321 Apr 17	21:10:22	14282	367	-28704	65	N	t-	-1.0426	0.9687	-0.0783	271.5	-	-	10S	101E
-0321 Oct 11	07:32:02	14275	366	-28698	70	P	a-	0.9537	1.0937	0.1223	253.4	75.2	-	6N	56W
-0320 Mar 07	06:34:34	14270	366	-28693	37	N	-t	1.0891	0.8996	-0.1794	270.9	-	-	8N	35W
-0320 Aug 31	13:45:46	14263	366	-28687	42	P	-a	-1.0102	0.9941	0.0146	249.3	26.9	-	11S	146W
-0319 Feb 24	09:56:32	14256	366	-28681	47	T	-p	0.3269	2.2776	1.2392	346.3	213.9	72.2	11N	85W
-0319 Aug 21	00:57:25	14249	366	-28675	52	T	-p	-0.3068	2.3102	1.2803	344.7	214.7	76.8	14S	46E
-0318 Feb 13	20:25:02	14243	366	-28669	57	T	a-	-0.4091	2.1006	1.1140	318.6	197.7	49.7	14N	117E
-0318 Aug 10	05:02:46	14236	365	-28663	62	T	t-	0.4476	2.0733	1.0006	357.2	209.3	4.0	17S	16W
-0317 Feb 03	11:45:37	14229	365	-28657	67	N	a-	-1.0799	0.8574	-0.1047	228.4	-	-	17N	113W
-0317 Jul 30	05:15:12	14222	365	-28651	72	N	t-	1.1841	0.7218	-0.3506	246.8	-	-	19S	19W
-0317 Dec 25	15:44:24	14217	365	-28646	39	P	-a	0.9386	1.1427	0.1291	270.1	80.1	-	25N	176W
-0316 Jun 18	22:12:19	14210	365	-28640	44	P	-h	-0.8176	1.3548	0.3607	289.5	131.2	-	24S	85E
-0316 Dec 13	23:23:51	14203	365	-28634	49	T+	-p	0.2689	2.4011	1.3285	358.4	220.4	82.6	23N	68E
-0315 Jun 08	12:24:35	14197	364	-28628	54	T-	pp	-0.0332	2.7713	1.8222	320.9	213.3	99.8	23S	129W
-0315 Dec 03	00:05:37	14190	364	-28622	59	T	t-	-0.4190	2.1430	1.0364	365.9	212.8	31.2	21N	56E
-0314 May 29	05:38:31	14183	364	-28616	64	P	a-	0.7036	1.5378	0.5957	283.0	154.7	-	20S	27W
-0314 Nov 21	23:33:51	14177	364	-28610	69	N	h-	-1.0800	0.9207	-0.1673	270.8	-	-	18N	63E
-0313 Apr 19	11:41:09	14171	364	-28605	36	N	-h	-1.1349	0.7799	-0.2285	237.1	-	-	10S	117W

-0313 May 18	21:14:20	14170	364	-28604	74	N	h-	1.4831	0.1253	-0.8520	97.8	-	-	17S	99E
-0313 Oct 12	16:00:56	14165	364	-28599	41	N	-a	1.0927	0.8522	-0.1460	237.1	-	-	7N	176E
-0312 Apr 07	17:34:28	14158	364	-28593	46	T	-t	-0.4056	2.1446	1.0834	356.4	213.1	46.2	6S	156E
-0312 Oct 01	06:51:56	14151	363	-28587	51	T	-p	0.3844	2.1347	1.1702	309.4	195.4	58.3	2N	46W
-0311 Mar 27	18:06:02	14145	363	-28581	56	T	t-	0.3411	2.2710	1.1939	366.4	221.4	68.6	1S	149E
-0311 Sep 20	22:46:26	14138	363	-28575	61	T	p-	-0.3038	2.2883	1.3125	318.7	203.8	76.3	3S	76E
-0310 Mar 16	20:24:26	14131	363	-28569	66	N	h-	1.0619	0.9321	-0.1126	264.5	-	-	4N	116E
-0310 Sep 10	11:05:11	14125	363	-28563	71	N	h-	-1.0560	0.9318	-0.0909	255.4	-	-	8S	108W
-0309 Feb 04	19:23:16	14119	363	-28558	38	P	-a	-0.9447	1.1131	0.1359	258.1	80.0	-	17N	132E
-0309 Aug 01	00:34:43	14112	362	-28552	43	N	-t	1.0464	0.9764	-0.0998	280.9	-	-	19S	51E
-0308 Jan 25	11:13:43	14106	362	-28546	48	T-	-p	-0.2520	2.3778	1.4130	315.1	204.3	83.6	20N	106W
-0308 Jul 20	01:04:53	14099	362	-28540	53	T	pp	0.2970	2.3441	1.2826	362.5	222.9	79.6	22S	43E
-0307 Jan 14	02:08:42	14092	362	-28534	58	T	p-	0.4421	2.0457	1.0480	318.6	194.6	32.9	23N	30E
-0307 Jul 09	06:47:23	14086	362	-28528	63	P	a-	-0.4727	1.9954	0.9861	329.7	198.0	-	24S	43W
-0306 Jan 03	11:38:31	14079	362	-28522	68	N	h-	1.1903	0.7025	-0.3541	233.7	-	-	25N	114W
-0306 May 30	12:41:31	14074	361	-28517	35	N	-a	1.3157	0.4148	-0.5277	165.9	-	-	20S	133W
-0306 Jun 28	19:41:48	14073	361	-28516	73	N	a-	-1.1900	0.6534	-0.3047	207.0	-	-	25S	122E
-0306 Nov 23	18:19:42	14067	361	-28511	40	N	-t	-1.1327	0.8335	-0.2732	265.8	-	-	19N	142E
-0305 May 20	05:56:35	14060	361	-28505	45	P	-a	0.5947	1.7408	0.7922	295.9	173.8	-	18S	32W
-0305 Nov 12	18:54:42	14054	361	-28499	50	T	-p	-0.4325	2.1014	1.0280	350.2	206.2	26.7	16N	132E
-0304 May 08	20:17:29	14047	361	-28493	55	T-	pp	-0.1621	2.5570	1.5639	337.8	218.6	96.2	16S	112E
-0304 Nov 01	02:24:03	14041	361	-28487	60	T	p-	0.2794	2.3525	1.3381	332.9	210.0	80.2	14N	19E
-0303 Apr 28	03:54:57	14034	360	-28481	65	P	t-	-0.9695	1.1033	0.0554	286.5	56.5	-	13S	2W
-0303 Oct 21	16:11:13	14027	360	-28475	70	P	a-	0.9401	1.1191	0.1467	255.4	82.0	-	10N	172E
-0302 Mar 18	13:34:43	14022	360	-28470	37	N	-t	1.1440	0.7963	-0.2778	256.9	-	-	4N	142W
-0302 Sep 11	21:48:39	14015	360	-28464	42	N	-a	-1.0479	0.9277	-0.0573	243.4	-	-	7S	91E
-0301 Mar 07	17:28:08	14009	360	-28458	47	T	-p	0.3710	2.1933	1.1615	342.2	209.7	60.8	7N	160E
-0301 Sep 01	08:29:28	14002	360	-28452	52	T	-a	-0.3531	2.2286	1.1921	344.3	211.6	65.7	11S	69W
-0300 Feb 25	04:28:04	13996	359	-28446	57	T	a-	-0.3728	2.1644	1.1834	319.2	200.6	61.6	11N	5W
-0300 Aug 20	12:02:49	13989	359	-28440	62	T	t-	0.3906	2.1804	1.1027	362.1	215.7	51.2	14S	122W

## 3RD CENTURY BCE

**In the 3rd century BCE the total number of lunar eclipses was 228 lunar eclipses:**

**79 penumbral lunar eclipses, 64 partial lunar eclipses, 85 total lunar eclipses  
(30 central total lunar eclipses, 55 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
	ECLIPSE														
-0299 Feb 13	20:07:52	13982	359	-28434	67	N	a-	-1.0532	0.9049	-0.0541	233.3	-	-	14N	120E
-0299 Aug 09	12:05:01	13976	359	-28428	72	N	t-	1.1178	0.8444	-0.2296	263.4	-	-	17S	123W
-0298 Jan 05	00:17:28	13970	359	-28423	39	P	-a	0.9476	1.1268	0.1120	269.5	75.0	-	24N	56E
-0298 Jun 30	05:17:56	13964	359	-28417	44	P	-h	-0.8895	1.2217	0.2298	277.9	106.4	-	25S	22W
-0298 Dec 25	07:38:02	13957	359	-28411	49	T	-p	0.2741	2.3923	1.3183	359.2	220.5	81.8	24N	55W
-0297 Jun 19	19:46:40	13951	358	-28405	54	T-	pp	-0.1080	2.6336	1.6855	319.5	211.9	97.4	24S	120E
-0297 Dec 14	08:07:27	13944	358	-28399	59	T	t-	-0.4146	2.1508	1.0445	366.3	213.3	34.4	23N	64W
-0296 Jun 08	13:02:25	13938	358	-28393	64	P	a-	0.6303	1.6729	0.7295	290.7	167.7	-	22S	139W
-0296 Dec 02	07:45:01	13931	358	-28387	69	N	h-	-1.0752	0.9286	-0.1573	271.1	-	-	21N	60W
-0295 Apr 29	18:45:16	13926	358	-28382	36	N	-h	-1.2095	0.6438	-0.3664	219.2	-	-	14S	135E
-0295 May 29	04:23:04	13925	358	-28381	74	N	h-	1.4145	0.2526	-0.7276	137.7	-	-	19S	10W
-0295 Oct 23	00:33:09	13919	358	-28376	41	N	-a	1.0997	0.8391	-0.1587	234.9	-	-	11N	46E
-0294 Apr 19	00:16:23	13913	357	-28370	46	P	-t	-0.4807	2.0067	0.9458	351.9	204.8	-	10S	53E
-0294 Oct 12	15:26:43	13906	357	-28364	51	T	-p	0.4003	2.1066	1.1400	308.5	193.9	53.4	6N	176W
-0293 Apr 08	00:48:08	13900	357	-28358	56	T+	pp	0.2708	2.3980	1.3247	369.0	226.7	84.6	5S	47E
-0293 Oct 02	07:08:19	13893	357	-28352	61	T	p-	-0.2823	2.3302	1.3496	320.6	205.4	79.7	1N	51W
-0292 Mar 27	03:34:38	13887	357	-28346	66	P	h-	1.0017	1.0394	0.0009	274.9	7.1	-	0N	6E
-0292 Sep 20	18:59:00	13880	357	-28340	71	N	h-	-1.0292	0.9843	-0.0449	262.3	-	-	4S	132E
-0291 Feb 15	03:39:42	13875	356	-28335	38	P	-a	-0.9695	1.0651	0.0928	253.0	66.4	-	13N	7E
-0291 Aug 11	07:22:25	13868	356	-28329	43	N	-t	1.1113	0.8593	-0.2207	267.1	-	-	16S	52W
-0290 Feb 04	19:42:54	13862	356	-28323	48	T	-p	-0.2733	2.3377	1.3749	314.3	203.4	80.8	17N	126E
-0290 Jul 31	07:53:07	13855	356	-28317	53	T	-t	0.3661	2.2175	1.1556	358.3	216.7	61.6	20S	60W
-0289 Jan 25	10:34:13	13849	356	-28311	58	T	p-	0.4274	2.0726	1.0748	320.4	196.6	40.9	21N	97W
-0289 Jul 20	13:56:31	13842	356	-28305	63	T	a-	-0.4020	2.1244	1.1165	333.0	204.8	51.8	22S	151W
-0288 Jan 14	19:48:08	13836	355	-28299	68	N	t-	1.1816	0.7188	-0.3385	236.8	-	-	23N	124E
-0288 Jun 09	20:06:09	13830	355	-28294	35	N	-a	1.3863	0.2850	-0.6567	139.1	-	-	21S	115E
-0288 Jul 09	03:08:29	13829	355	-28293	73	N	a-	-1.1194	0.7825	-0.1748	223.0	-	-	24S	10E
-0288 Dec 04	02:20:47	13824	355	-28288	40	N	-t	-1.1379	0.8238	-0.2825	264.3	-	-	21N	21E
-0287 May 30	13:18:13	13817	355	-28282	45	P	-a	0.6709	1.6019	0.6517	289.5	161.6	-	20S	144W

-0287	Nov 23	03:11:37	13811	355	-28276	50	T	-p	-0.4346	2.0966	1.0251	348.9	205.5	25.3	19N	7E
-0286	May 20	03:19:07	13804	355	-28270	55	T-	pp	-0.0838	2.7021	1.7063	340.6	221.4	101.1	19S	6E
-0286	Nov 12	11:01:22	13798	355	-28264	60	T	p-	0.2751	2.3596	1.3468	332.0	209.7	80.7	17N	111W
-0285	May 09	10:31:14	13791	354	-28258	65	P	t-	-0.8905	1.2489	0.1996	300.9	105.4	-	17S	102W
-0285	Nov 02	00:57:01	13785	354	-28252	70	P	a-	0.9320	1.1344	0.1613	256.5	85.8	-	14N	40E
-0284	Mar 28	20:26:39	13780	354	-28247	37	N	-t	1.2056	0.6809	-0.3883	239.6	-	-	1S	113E
-0284	Sep 22	05:59:33	13773	354	-28241	42	N	-a	-1.0784	0.8747	-0.1160	238.6	-	-	3S	33W
-0283	Mar 18	00:54:00	13767	354	-28235	47	T	-t	0.4207	2.0988	1.0735	337.4	204.5	42.1	3N	47E
-0283	Sep 11	16:07:06	13760	354	-28229	52	T	-a	-0.3937	2.1573	1.1142	343.9	208.3	52.0	7S	175E
-0282	Mar 07	12:25:48	13754	353	-28223	57	T	p-	-0.3314	2.2375	1.2621	319.9	203.5	71.6	7N	126W
-0282	Aug 31	19:09:14	13747	353	-28217	62	T	p-	0.3391	2.2774	1.1948	366.1	220.6	68.4	10S	130E
-0281	Feb 25	04:22:09	13741	353	-28211	67	P	a-	-1.0201	0.9641	0.0081	239.2	19.6	-	10N	5W
-0281	Aug 20	19:04:01	13735	353	-28205	72	N	t-	1.0580	0.9548	-0.1208	276.6	-	-	13S	131E
-0280	Jan 16	08:44:00	13729	353	-28200	39	P	-a	0.9613	1.1021	0.0865	268.1	66.3	-	23N	70W
-0280	Jul 10	12:30:23	13723	353	-28194	44	P	-h	-0.9564	1.0982	0.1081	266.1	74.0	-	24S	130W
-0279	Jan 04	15:45:41	13716	352	-28188	49	T	-p	0.2840	2.3746	1.2998	359.8	220.4	80.1	24N	177W
-0279	Jun 30	03:13:28	13710	352	-28182	54	T-	-p	-0.1792	2.5027	1.5550	317.6	209.4	92.6	24S	8E
-0279	Dec 24	16:05:34	13704	352	-28176	59	T	t-	-0.4073	2.1637	1.0583	366.7	214.2	39.2	23N	177E
-0278	Jun 19	20:26:26	13697	352	-28170	64	P	a-	0.5574	1.8076	0.8622	297.6	178.5	-	23S	109E
-0278	Dec 13	15:56:17	13691	352	-28164	69	N	h-	-1.0697	0.9372	-0.1458	271.3	-	-	22N	177E
-0277	May 11	01:42:19	13685	352	-28159	36	N	-h	-1.2888	0.4996	-0.5129	196.6	-	-	18S	29E
-0277	Jun 09	11:29:29	13684	352	-28158	74	N	h-	1.3445	0.3829	-0.6009	168.2	-	-	21S	117W
-0277	Nov 03	09:11:15	13679	351	-28153	41	N	-a	1.1027	0.8331	-0.1638	233.6	-	-	15N	84W
-0276	Apr 29	06:50:42	13673	351	-28147	46	P	-t	-0.5612	1.8591	0.7980	346.0	193.6	-	14S	47W
-0276	Oct 23	00:08:35	13666	351	-28141	51	T	-p	0.4106	2.0886	1.1203	308.0	192.8	49.7	11N	52E
-0275	Apr 18	07:23:31	13660	351	-28135	56	T+	pp	0.1948	2.5357	1.4660	370.8	230.9	95.8	9S	54W
-0275	Oct 12	15:36:51	13654	351	-28129	61	T-	p-	-0.2669	2.3609	1.3756	322.3	206.6	81.9	6N	180W
-0274	Apr 07	10:38:19	13647	351	-28123	66	P	h-	0.9351	1.1586	0.1262	285.2	82.9	-	4S	102W
-0274	Oct 02	03:00:03	13641	351	-28117	71	Nx	h-	-1.0092	1.0241	-0.0114	267.7	-	-	1N	10E
-0273	Feb 26	11:47:23	13636	350	-28112	38	P	-a	-1.0018	1.0033	0.0360	246.5	41.6	-	9N	116W
-0273	Aug 22	14:18:39	13629	350	-28106	43	N	-t	1.1686	0.7562	-0.3279	253.6	-	-	13S	158W
-0272	Feb 16	04:04:27	13623	350	-28100	48	T	-p	-0.3006	2.2865	1.3259	313.3	201.9	76.8	14N	0E
-0272	Aug 10	14:50:18	13616	350	-28094	53	T	-t	0.4285	2.1033	1.0408	353.8	209.8	32.6	17S	165W
-0271	Feb 04	18:52:48	13610	350	-28088	58	T	p-	0.4079	2.1084	1.1106	322.5	199.0	49.3	18N	138E
-0271	Jul 30	21:13:17	13604	350	-28082	63	T	a-	-0.3367	2.2437	1.2368	335.3	209.8	70.8	20S	99E
-0270	Jan 25	03:51:20	13597	349	-28076	68	N	t-	1.1685	0.7431	-0.3146	240.9	-	-	21N	3E
-0270	Jun 21	03:31:27	13592	349	-28071	35	N	-a	1.4561	0.1568	-0.7849	104.3	-	-	22S	3E
-0270	Jul 20	10:39:37	13591	349	-28070	73	N	a-	-1.0521	0.9060	-0.0512	236.4	-	-	23S	103W
-0270	Dec 15	10:22:34	13586	349	-28065	40	N	-t	-1.1424	0.8148	-0.2902	262.9	-	-	22N	99W
-0269	Jun 10	20:39:04	13579	349	-28059	45	P	-a	0.7468	1.4637	0.5113	282.2	146.7	-	22S	105E

-0269	Dec 04	11:29:36	13573	349	-28053	50	T	-p	-0.4363	2.0920	1.0233	347.6	204.9	24.3	22N	117W
-0268	May 30	10:19:17	13567	349	-28047	55	T-	pp	-0.0053	2.8477	1.8487	342.7	222.9	102.9	21S	100W
-0268	Nov 22	19:41:19	13560	348	-28041	60	T	p-	0.2729	2.3627	1.3520	331.0	209.4	81.0	20N	119E
-0267	May 19	17:04:21	13554	348	-28035	65	P	t-	-0.8093	1.3987	0.3477	314.0	136.4	-	20S	158E
-0267	Nov 12	09:45:58	13548	348	-28029	70	P	a-	0.9265	1.1446	0.1712	257.1	88.1	-	18N	93W
-0266	Apr 09	03:12:11	13543	348	-28024	37	N	-t	1.2723	0.5560	-0.5085	218.5	-	-	5S	9E
-0266	May 08	18:08:51	13542	348	-28023	75	Nb	t-	-1.5753	0.0025	-1.0669	15.7	-	-	17S	142E
-0266	Oct 03	14:17:08	13536	348	-28018	42	N	-a	-1.1029	0.8324	-0.1638	234.7	-	-	1N	159W
-0265	Mar 29	08:11:18	13530	348	-28012	47	P	-t	0.4784	1.9896	0.9708	331.7	197.7	-	1S	65W
-0265	Sep 22	23:53:30	13524	348	-28006	52	T	-a	-0.4263	2.1007	1.0512	343.6	205.3	35.6	2S	57E
-0264	Mar 17	20:14:52	13517	347	-28000	57	T	p-	-0.2821	2.3253	1.3552	320.7	206.5	80.6	2N	115E
-0264	Sep 11	02:25:05	13511	347	-27994	62	T	p-	0.2956	2.3596	1.2722	369.2	224.2	78.7	6S	19E
-0263	Mar 07	12:27:53	13505	347	-27988	67	P	a-	-0.9801	1.0361	0.0829	245.9	62.0	-	6N	128W
-0263	Aug 31	02:13:28	13498	347	-27982	72	Nx	t-	1.0060	1.0511	-0.0261	287.0	-	-	10S	23E
-0262	Jan 26	17:02:51	13493	347	-27977	39	P	-a	0.9806	1.0669	0.0508	265.6	51.3	-	21N	165E
-0262	Jul 21	19:48:05	13487	347	-27971	44	N	-a	-1.0197	0.9815	-0.0076	253.8	-	-	23S	120E
-0261	Jan 15	23:47:33	13481	346	-27965	49	T	-p	0.2980	2.3490	1.2739	360.1	219.9	77.5	22N	63E
-0261	Jul 11	10:43:45	13474	346	-27959	54	T-	-p	-0.2480	2.3767	1.4288	315.1	206.1	85.4	23S	105W
-0260	Jan 04	23:59:39	13468	346	-27953	59	T	t-	-0.3966	2.1825	1.0789	367.1	215.4	45.3	23N	58E
-0260	Jun 30	03:52:40	13462	346	-27947	64	P	a-	0.4866	1.9389	0.9909	303.5	187.3	-	23S	3W
-0260	Dec 24	00:07:15	13456	346	-27941	69	N	h-	-1.0630	0.9476	-0.1318	271.6	-	-	23N	55E
-0259	May 21	08:35:03	13450	346	-27936	36	N	-h	-1.3701	0.3517	-0.6635	168.0	-	-	21S	75W
-0259	Jun 19	18:34:56	13449	346	-27935	74	N	h-	1.2743	0.5137	-0.4741	193.2	-	-	22S	136E
-0259	Nov 13	17:54:07	13444	345	-27930	41	N	-a	1.1026	0.8329	-0.1629	232.9	-	-	18N	144E
-0258	May 10	13:19:58	13438	345	-27924	46	P	-t	-0.6452	1.7052	0.6437	338.5	178.8	-	17S	146W
-0258	Nov 03	08:55:21	13432	345	-27918	51	T	-p	0.4167	2.0782	1.1083	307.7	192.2	47.3	14N	81W
-0257	Apr 29	13:53:42	13425	345	-27912	56	T+	pp	0.1142	2.6819	1.6155	371.8	233.7	102.9	13S	154W
-0257	Oct 24	00:11:06	13419	345	-27906	61	T-	p-	-0.2568	2.3815	1.3918	323.8	207.4	83.2	10N	50E
-0256	Apr 17	17:38:28	13413	345	-27900	66	P	h-	0.8645	1.2852	0.2585	294.8	116.0	-	8S	151E
-0256	Oct 12	11:06:26	13407	345	-27894	71	P	h-	-0.9943	1.0544	0.0130	272.0	26.7	-	5N	113W
-0255	Mar 08	19:48:37	13401	344	-27889	38	N	-a	-1.0399	0.9311	-0.0315	238.6	-	-	5N	122E
-0255	Apr 07	04:28:31	13400	344	-27888	76	Nb	a-	1.5487	0.0038	-0.9711	17.0	-	-	4S	10W
-0255	Sep 01	21:23:54	13395	344	-27883	43	N	-t	1.2182	0.6671	-0.4208	240.6	-	-	9S	95E
-0254	Feb 26	12:17:09	13389	344	-27877	48	T	-p	-0.3353	2.2218	1.2633	311.9	199.9	70.6	10N	125W
-0254	Aug 21	21:57:16	13383	344	-27871	53	P	-t	0.4834	2.0029	0.9397	349.1	202.7	-	13S	87E
-0253	Feb 16	03:01:04	13376	344	-27865	58	T	p-	0.3805	2.1586	1.1609	324.9	202.1	58.7	14N	15E
-0253	Aug 11	04:40:08	13370	344	-27859	63	T	p-	-0.2789	2.3495	1.3431	336.6	213.2	81.9	17S	14W
-0252	Feb 05	11:43:23	13364	343	-27853	68	N	t-	1.1473	0.7820	-0.2756	246.8	-	-	18N	115W
-0252	Jul 01	11:00:52	13359	343	-27848	35	Ne	-a	1.5227	0.0349	-0.9074	49.7	-	-	22S	110W
-0252	Jul 30	18:19:04	13358	343	-27847	73	P	a-	-0.9911	1.0182	0.0605	247.2	53.7	-	21S	142E



-0252	Dec 25	18:21:26	13353	343	-27842	40	N	-t	-1.1490	0.8018	-0.3012	260.8	-	-	23N	141E
-0251	Jun 21	03:59:23	13347	343	-27836	45	P	-a	0.8226	1.3261	0.3708	273.7	127.8	-	23S	5W
-0251	Dec 14	19:48:50	13340	343	-27830	50	T	-p	-0.4377	2.0878	1.0226	346.2	204.4	23.9	23N	118E
-0250	Jun 10	17:15:45	13334	343	-27824	55	T+	pp	0.0751	2.7217	1.7187	343.9	222.9	101.8	23S	155E
-0250	Dec 04	04:23:56	13328	342	-27818	60	T+	p-	0.2719	2.3632	1.3552	329.9	209.0	81.1	22N	12W
-0249	May 30	23:32:12	13322	342	-27812	65	P	t-	-0.7241	1.5561	0.5030	326.2	160.6	-	22S	60E
-0249	Nov 23	18:38:45	13316	342	-27806	70	P	a-	0.9240	1.1491	0.1758	257.3	89.2	-	21N	133E
-0248	Apr 19	09:52:26	13310	342	-27801	37	N	-t	1.3436	0.4229	-0.6371	192.3	-	-	9S	93W
-0248	May 19	00:30:03	13309	342	-27800	75	N	t-	-1.4901	0.1581	-0.9098	122.1	-	-	20S	46E
-0248	Oct 13	22:40:41	13304	342	-27795	42	N	-a	-1.1222	0.7997	-0.2017	231.7	-	-	6N	73E
-0247	Apr 08	15:25:02	13298	342	-27789	47	P	-t	0.5400	1.8735	0.8608	325.2	189.3	-	5S	175W
-0247	Oct 03	07:46:08	13292	342	-27783	52	P	-a	-0.4530	2.0548	0.9992	343.6	202.7	-	2N	63W
-0246	Mar 29	03:58:03	13286	341	-27777	57	T-	p-	-0.2272	2.4234	1.4585	321.4	209.1	88.0	2S	3W
-0246	Sep 22	09:48:41	13280	341	-27771	62	T+	pp	0.2586	2.4298	1.3379	371.7	226.9	85.5	2S	93W
-0245	Mar 18	20:26:21	13273	341	-27765	67	P	a-	-0.9342	1.1190	0.1684	253.2	87.3	-	2N	111E
-0245	Sep 11	09:33:06	13267	341	-27759	72	P	t-	0.9613	1.1339	0.0551	295.0	57.0	-	6S	89W
-0244	Feb 07	01:12:33	13262	341	-27754	39	P	-a	1.0069	1.0188	0.0025	261.7	11.4	-	18N	42E
-0244	Aug 01	03:15:18	13256	341	-27748	44	N	-a	-1.0762	0.8774	-0.1109	241.8	-	-	20S	8E
-0243	Jan 26	07:40:56	13250	340	-27742	49	T	-p	0.3186	2.3111	1.2363	360.0	218.9	73.1	20N	56W
-0243	Jul 21	18:19:36	13244	340	-27736	54	T	-p	-0.3125	2.2587	1.3100	312.3	202.0	75.7	22S	141E
-0242	Jan 15	07:47:31	13237	340	-27730	59	T	t-	-0.3806	2.2107	1.1096	367.8	217.2	52.9	22N	58W
-0242	Jul 11	11:22:03	13231	340	-27724	64	T	a-	0.4184	2.0656	1.1144	308.7	194.5	49.2	23S	115W
-0241	Jan 04	08:13:26	13225	340	-27718	69	N	h-	-1.0517	0.9661	-0.1088	272.8	-	-	22N	66W
-0241	Jun 01	15:23:45	13220	340	-27713	36	N	-h	-1.4534	0.2005	-0.8180	129.2	-	-	23S	178W
-0241	Jul 01	01:41:29	13219	340	-27712	74	N	h-	1.2055	0.6423	-0.3502	214.3	-	-	23S	29E
-0241	Nov 25	02:39:53	13214	340	-27707	41	N	-a	1.1009	0.8350	-0.1591	232.6	-	-	21N	13E
-0240	May 20	19:45:14	13208	339	-27701	46	P	-t	-0.7316	1.5471	0.4847	329.2	159.5	-	20S	117E
-0240	Nov 13	17:45:38	13202	339	-27695	51	T	-p	0.4201	2.0724	1.1015	307.6	191.8	45.9	18N	146E
-0239	May 09	20:20:35	13196	339	-27689	56	T+	pp	0.0302	2.8345	1.7711	371.8	234.9	106.1	16S	108E
-0239	Nov 03	08:50:41	13189	339	-27683	61	T-	p-	-0.2516	2.3932	1.3995	325.1	208.1	83.9	14N	81W
-0238	Apr 29	00:32:57	13183	339	-27677	66	P	h-	0.7879	1.4230	0.4017	303.9	141.1	-	12S	46E
-0238	Oct 23	19:19:54	13177	339	-27671	71	P	h-	-0.9858	1.0728	0.0259	275.0	37.6	-	9N	122E
-0237	Mar 20	03:41:44	13172	338	-27666	38	N	-a	-1.0853	0.8455	-0.1125	228.8	-	-	1N	2E
-0237	Apr 18	11:54:44	13171	338	-27665	76	N	a-	1.4823	0.1229	-0.8469	95.6	-	-	8S	124W
-0237	Sep 13	04:39:01	13166	338	-27660	43	N	-t	1.2597	0.5928	-0.4988	228.7	-	-	5S	16W
-0236	Mar 08	20:21:29	13160	338	-27654	48	T	-p	-0.3768	2.1446	1.1880	310.0	197.0	61.2	6N	113E
-0236	Sep 01	05:15:10	13154	338	-27648	53	P	-t	0.5302	1.9175	0.8535	344.7	195.7	-	10S	24W
-0235	Feb 26	11:01:37	13148	338	-27642	58	T	p-	0.3475	2.2191	1.2215	327.6	205.4	67.7	10N	106W
-0235	Aug 21	12:14:43	13142	338	-27636	63	T-	p-	-0.2266	2.4453	1.4393	337.3	215.4	89.0	14S	128W
-0234	Feb 15	19:27:35	13136	337	-27630	68	N	t-	1.1204	0.8310	-0.2262	253.9	-	-	15N	128E

-0234 Aug 11	02:04:47	13130	337	-27624	73	P	a-	-0.9350	1.1215	0.1630	256.1	86.7	-	18S	24E
-0233 Jan 06	02:16:07	13124	337	-27619	40	N	-t	-1.1591	0.7816	-0.3184	257.6	-	-	22N	23E
-0233 Jul 02	11:21:46	13118	337	-27613	45	P	-a	0.8961	1.1931	0.2343	264.4	103.9	-	23S	116W
-0233 Dec 26	04:05:54	13112	337	-27607	50	T	-p	-0.4414	2.0788	1.0177	344.5	203.5	21.2	23N	6W
-0232 Jun 21	00:13:15	13106	337	-27601	55	T+	pp	0.1539	2.5793	1.5720	344.3	221.6	97.5	23S	50E
-0232 Dec 14	13:04:57	13100	337	-27595	60	T+	p-	0.2690	2.3668	1.3619	328.8	208.7	81.5	24N	142W
-0231 Jun 10	06:00:22	13094	336	-27589	65	P	t-	-0.6397	1.7124	0.6567	336.7	179.4	-	23S	37W
-0231 Dec 04	03:31:49	13088	336	-27583	70	P	a-	0.9219	1.1527	0.1799	257.4	90.1	-	23N	0W
-0230 Apr 30	16:27:18	13083	336	-27578	37	N	-t	1.4193	0.2820	-0.7738	158.6	-	-	12S	167E
-0230 May 30	06:49:07	13082	336	-27577	75	N	t-	-1.4024	0.3184	-0.7483	170.6	-	-	22S	50W
-0230 Oct 25	07:10:12	13077	336	-27572	42	N	-a	-1.1360	0.7768	-0.2295	229.7	-	-	10N	56W
-0229 Apr 19	22:32:35	13071	336	-27566	47	P	-t	0.6073	1.7471	0.7401	317.6	178.6	-	9S	76E
-0229 Oct 14	15:46:04	13065	336	-27560	52	P	-a	-0.4728	2.0213	0.9600	343.8	200.7	-	6N	175E
-0228 Apr 08	11:34:20	13059	335	-27554	57	T-	p-	-0.1660	2.5333	1.5730	321.9	211.3	93.9	6S	119W
-0228 Oct 02	17:22:17	13053	335	-27548	62	T+	pp	0.2303	2.4839	1.3879	373.5	228.7	89.8	3N	152E
-0227 Mar 29	04:16:45	13047	335	-27542	67	P	a-	-0.8818	1.2140	0.2656	261.0	108.3	-	2S	9W
-0227 Sep 21	17:02:48	13041	335	-27536	72	P	t-	0.9240	1.2030	0.1228	301.2	84.2	-	1S	157E
-0226 Feb 17	09:13:16	13036	335	-27531	39	N	-a	1.0398	0.9585	-0.0579	256.3	-	-	14N	79W
-0226 Aug 12	10:50:04	13030	335	-27525	44	N	-a	-1.1275	0.7831	-0.2048	229.9	-	-	18S	107W
-0225 Feb 06	15:24:51	13024	335	-27519	49	T	-t	0.3463	2.2600	1.1859	359.4	217.1	66.2	17N	172W
-0225 Aug 02	02:01:43	13018	334	-27513	54	T	-p	-0.3720	2.1501	1.2001	309.3	197.4	63.0	20S	25E
-0224 Jan 26	15:29:11	13012	334	-27507	59	T	p-	-0.3592	2.2483	1.1503	368.5	219.3	61.1	19N	174W
-0224 Jul 21	18:55:17	13006	334	-27501	64	T	p-	0.3540	2.1856	1.2307	313.0	200.1	67.4	21S	131E
-0223 Jan 14	16:16:23	13000	334	-27495	69	N	h-	-1.0370	0.9906	-0.0794	274.5	-	-	21N	173E
-0223 Jun 11	22:11:24	12995	334	-27490	36	Ne	-t	-1.5362	0.0505	-0.9718	66.0	-	-	24S	80E
-0223 Jul 11	08:50:11	12993	334	-27489	74	N	t-	1.1390	0.7670	-0.2307	232.4	-	-	22S	79W
-0223 Dec 05	11:27:41	12989	334	-27484	41	N	-a	1.0982	0.8390	-0.1529	232.4	-	-	23N	119W
-0222 Jun 01	02:07:15	12982	333	-27478	46	P	-t	-0.8198	1.3858	0.3221	318.1	133.5	-	22S	20E
-0222 Nov 25	02:38:42	12976	333	-27472	51	T	-p	0.4213	2.0706	1.0990	307.6	191.7	45.4	21N	12E
-0221 May 21	02:45:56	12970	333	-27466	56	T-	pp	-0.0556	2.7867	1.7258	370.8	234.4	105.5	19S	11E
-0221 Nov 14	17:32:46	12964	333	-27460	61	T-	p-	-0.2489	2.3998	1.4027	326.3	208.6	84.2	17N	148E
-0220 May 09	07:27:05	12958	333	-27454	66	P	h-	0.7099	1.5638	0.5473	311.9	160.4	-	16S	59W
-0220 Nov 03	03:37:22	12952	333	-27448	71	P	h-	-0.9810	1.0841	0.0323	277.2	42.1	-	13N	3W
-0219 Mar 30	11:28:51	12948	333	-27443	38	N	-a	-1.1358	0.7507	-0.2032	217.2	-	-	3S	117W
-0219 Apr 28	19:18:01	12947	332	-27442	76	N	a-	1.4129	0.2481	-0.7173	133.7	-	-	12S	124E
-0219 Sep 23	12:02:23	12942	332	-27437	43	N	-t	1.2943	0.5311	-0.5639	218.0	-	-	0S	128W
-0218 Mar 20	04:17:33	12936	332	-27431	48	T	-a	-0.4250	2.0554	1.1004	307.6	193.0	46.1	1N	8W
-0218 Sep 12	12:43:40	12930	332	-27425	53	P	-t	0.5686	1.8474	0.7826	340.6	189.3	-	5S	138W
-0217 Mar 09	18:50:10	12924	332	-27419	58	T	p-	0.3055	2.2962	1.2986	330.6	209.2	76.8	6N	135E
-0217 Sep 01	20:00:44	12918	332	-27413	63	T-	p-	-0.1830	2.5251	1.5192	337.5	216.7	93.4	10S	114E

-0216 Feb 27	02:59:59	12912	332	-27407	68	N	t-	1.0851	0.8957	-0.1612	262.6	-	-	11N	13E
-0216 Aug 21	09:59:09	12906	331	-27401	73	P	a-	-0.8858	1.2125	0.2527	263.2	106.5	-	15S	95W
-0215 Jan 16	10:04:55	12901	331	-27396	40	N	-t	-1.1740	0.7526	-0.3439	253.0	-	-	21N	94W
-0215 Jul 12	18:46:47	12895	331	-27390	45	P	-a	0.9665	1.0660	0.1031	254.3	70.3	-	22S	132E
-0214 Jan 05	12:20:38	12889	331	-27384	50	T	-p	-0.4479	2.0646	1.0084	342.5	202.4	14.5	23N	129W
-0214 Jul 02	07:09:35	12883	331	-27378	55	T+	-p	0.2325	2.4376	1.4254	343.9	218.8	89.5	23S	54W
-0214 Dec 25	21:45:59	12877	331	-27372	60	T+	p-	0.2657	2.3710	1.3699	327.7	208.5	82.1	24N	88E
-0213 Jun 21	12:27:33	12871	330	-27366	65	P	t-	-0.5549	1.8695	0.8108	346.0	194.5	-	24S	134W
-0213 Dec 15	12:24:48	12865	330	-27360	70	P	a-	0.9198	1.1560	0.1843	257.5	91.1	-	24N	133W
-0212 May 10	23:00:25	12860	330	-27355	37	N	-t	1.4963	0.1387	-0.9132	112.3	-	-	15S	67E
-0212 Jun 09	13:09:38	12859	330	-27354	75	N	t-	-1.3150	0.4783	-0.5875	205.8	-	-	24S	146W
-0212 Nov 04	15:44:38	12854	330	-27349	42	N	-a	-1.1450	0.7625	-0.2482	228.8	-	-	14N	175E
-0211 Apr 30	05:37:58	12848	330	-27343	47	P	-t	0.6774	1.6159	0.6143	308.9	165.6	-	13S	32W
-0211 Oct 24	23:51:03	12842	330	-27337	52	P	-a	-0.4877	1.9966	0.9300	344.3	199.1	-	11N	53E
-0210 Apr 19	19:06:43	12836	330	-27331	57	T-	pp	-0.1010	2.6506	1.6945	322.0	212.8	97.8	10S	126E
-0210 Oct 14	01:02:58	12830	329	-27325	62	T+	pp	0.2075	2.5276	1.4280	375.0	230.0	92.8	7N	35E
-0209 Apr 09	12:00:19	12825	329	-27319	67	P	a-	-0.8236	1.3198	0.3732	268.9	126.4	-	7S	127W
-0209 Oct 03	00:42:42	12819	329	-27313	72	P	t-	0.8941	1.2584	0.1773	305.6	100.1	-	3N	40E
-0208 Feb 28	17:04:21	12814	329	-27308	39	N	-a	1.0800	0.8847	-0.1319	248.9	-	-	10N	162E
-0208 Aug 22	18:34:23	12808	329	-27302	44	N	-a	-1.1719	0.7017	-0.2862	218.7	-	-	14S	136E
-0208 Sep 21	06:02:17	12807	329	-27301	82	N	a-	1.5433	0.0390	-0.9861	56.9	-	-	1S	39W
-0207 Feb 16	22:58:56	12802	329	-27296	49	T	-t	0.3815	2.1949	1.1218	358.1	214.4	54.9	14N	73E
-0207 Aug 12	09:51:27	12796	328	-27290	54	T	-a	-0.4256	2.0527	1.1010	306.2	192.5	46.1	17S	94W
-0206 Feb 05	23:01:24	12790	328	-27284	59	T	p-	-0.3299	2.3002	1.2059	369.5	221.9	70.2	17N	72E
-0206 Aug 02	02:33:53	12784	328	-27278	64	T	p-	0.2944	2.2971	1.3379	316.6	204.5	78.7	19S	15E
-0205 Jan 26	00:12:18	12778	328	-27272	69	Nx	h-	-1.0156	1.0270	-0.0374	277.3	-	-	19N	54E
-0205 Jul 22	16:03:07	12772	328	-27266	74	N	t-	1.0765	0.8845	-0.1189	247.7	-	-	20S	173E
-0205 Dec 16	20:13:56	12768	328	-27261	41	N	-a	1.0975	0.8387	-0.1504	231.8	-	-	25N	110E
-0204 Jun 11	08:29:01	12762	328	-27255	46	P	-t	-0.9077	1.2254	0.1600	305.0	96.5	-	24S	76W
-0204 Dec 05	11:32:57	12756	327	-27249	51	T	-p	0.4220	2.0694	1.0976	307.7	191.6	45.1	23N	121W
-0203 May 31	09:09:40	12750	327	-27243	56	T-	pp	-0.1434	2.6245	1.5658	368.5	231.9	100.7	22S	86W
-0203 Nov 25	02:17:47	12744	327	-27237	61	T-	p-	-0.2491	2.4010	1.4009	327.4	208.9	84.2	20N	16E
-0202 May 20	14:18:26	12738	327	-27231	66	P	h-	0.6279	1.7119	0.6999	318.9	176.4	-	19S	163W
-0202 Nov 14	11:58:48	12732	327	-27225	71	P	h-	-0.9803	1.0876	0.0315	278.7	41.7	-	17N	129W
-0201 Apr 10	19:08:31	12727	327	-27220	38	N	-a	-1.1928	0.6442	-0.3060	202.9	-	-	8S	126E
-0201 May 10	02:37:11	12726	327	-27219	76	N	a-	1.3392	0.3814	-0.5801	163.2	-	-	15S	12E
-0201 Oct 04	19:35:52	12721	326	-27214	43	N	-t	1.3206	0.4843	-0.6138	209.2	-	-	4N	116E
-0200 Mar 30	12:06:28	12716	326	-27208	48	T	-a	-0.4789	1.9558	1.0021	304.5	187.9	6.9	3S	127W
-0200 Sep 22	20:21:37	12710	326	-27202	53	P	-t	0.6001	1.7899	0.7245	336.9	183.5	-	1S	106E

# 2ND CENTURY BCE

In the 2nd century BCE the total number of lunar eclipses was 240 lunar eclipses: 85 penumbral lunar eclipses, 86 partial lunar eclipses, 69 total lunar eclipses (48 central total lunar eclipses, 21 non-central total lunar eclipses).

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
ECLIPSE															
-0199 Mar 20	02:31:12	12704	326	-27196	58	T+	p-	0.2580	2.3835	1.3856	333.6	212.8	84.9	2N	18E
-0199 Sep 12	03:55:24	12698	326	-27190	63	T-	p-	-0.1459	2.5933	1.5874	337.3	217.3	96.1	6S	7W
-0198 Mar 09	10:22:38	12692	326	-27184	68	N	t-	1.0423	0.9739	-0.0825	272.3	-	-	7N	99W
-0198 Sep 01	18:01:13	12686	326	-27178	73	P	a-	-0.8425	1.2926	0.3313	269.0	120.3	-	11S	143E
-0197 Jan 27	17:47:27	12681	325	-27173	40	N	-t	-1.1941	0.7135	-0.3789	246.8	-	-	18N	150E
-0197 Jul 24	02:16:27	12676	325	-27167	45	N	-a	1.0324	0.9474	-0.0202	243.7	-	-	20S	19E
-0197 Aug 22	10:35:35	12675	325	-27166	83	Nb	a-	-1.5284	0.0324	-0.9256	48.3	-	-	15S	105W
-0196 Jan 16	20:29:40	12670	325	-27161	50	P	-p	-0.4597	2.0401	0.9892	340.1	200.7	-	21N	109E
-0196 Jul 12	14:10:12	12664	325	-27155	55	T	-a	0.3065	2.3045	1.2869	342.8	214.8	77.6	23S	160W
-0195 Jan 05	06:23:07	12658	325	-27149	60	T+	p-	0.2586	2.3818	1.3849	326.7	208.5	83.1	23N	41W
-0195 Jul 01	18:56:38	12652	325	-27143	65	P	t-	-0.4719	2.0234	0.9613	353.8	206.5	-	24S	128E
-0195 Dec 25	21:15:18	12647	324	-27137	70	P	a-	0.9158	1.1626	0.1923	257.9	92.9	-	25N	95E
-0194 Jun 20	19:31:57	12641	324	-27131	75	N	t-	-1.2284	0.6371	-0.4283	233.6	-	-	25S	118E
-0194 Nov 16	00:21:49	12636	324	-27126	42	N	-a	-1.1516	0.7523	-0.2624	228.3	-	-	17N	45E
-0193 May 11	12:39:59	12630	324	-27120	47	P	-t	0.7511	1.4782	0.4814	299.0	149.2	-	16S	139W
-0193 Nov 05	08:01:29	12624	324	-27114	52	P	-a	-0.4976	1.9809	0.9097	344.9	198.2	-	14N	71W
-0192 Apr 30	02:34:41	12618	324	-27108	57	T-	pp	-0.0314	2.7763	1.8238	321.6	213.5	99.8	14S	13E
-0192 Oct 24	08:50:43	12613	324	-27102	62	T+	pp	0.1905	2.5602	1.4576	376.1	230.8	94.7	11N	83W
-0191 Apr 19	19:37:47	12607	323	-27096	67	P	a-	-0.7605	1.4350	0.4897	276.8	142.5	-	11S	117E
-0191 Oct 13	08:32:24	12601	323	-27090	72	P	t-	0.8713	1.3005	0.2186	308.7	110.3	-	7N	79W
-0190 Mar 11	00:44:31	12596	323	-27085	39	N	-a	1.1283	0.7962	-0.2205	239.1	-	-	6N	45E

-0190 Apr 09	11:10:31	12595	323	-27084	77	Nb	a-	-1.5270	0.0466	-0.9345	59.9	-	-	7S	115W
-0190 Sep 03	02:27:59	12590	323	-27079	44	N	-a	-1.2095	0.6327	-0.3554	208.5	-	-	10S	16E
-0190 Oct 02	14:08:15	12589	323	-27078	82	N	a-	1.5150	0.0908	-0.9341	86.1	-	-	3N	162W
-0189 Feb 28	06:22:41	12585	323	-27073	49	T	-t	0.4244	2.1155	1.0435	356.1	210.4	33.7	10N	39W
-0189 Aug 23	17:48:59	12579	323	-27067	54	T	-a	-0.4728	1.9671	1.0132	303.2	187.5	17.1	14S	146E
-0188 Feb 17	06:25:54	12573	323	-27061	59	T	p-	-0.2940	2.3640	1.2737	370.5	224.8	79.0	13N	40W
-0188 Aug 12	10:18:43	12567	322	-27055	64	T+	p-	0.2405	2.3984	1.4346	319.7	207.8	86.2	16S	102W
-0187 Feb 05	08:03:33	12561	322	-27049	69	P	h-	-0.9895	1.0719	0.0134	280.7	27.6	-	16N	64W
-0187 Aug 01	23:18:57	12556	322	-27043	74	N	t-	1.0169	0.9969	-0.0126	261.2	-	-	18S	63E
-0187 Dec 27	04:59:37	12551	322	-27038	41	N	-a	1.0980	0.8362	-0.1498	230.8	-	-	25N	21W
-0186 Jun 22	14:51:20	12545	322	-27032	46	Nx	-t	-0.9947	1.0669	-0.0006	290.0	-	-	25S	171W
-0186 Dec 16	20:25:49	12539	322	-27026	51	T	-p	0.4238	2.0660	1.0944	307.7	191.5	44.4	24N	106E
-0185 Jun 11	15:35:41	12533	321	-27020	56	T-	pp	-0.2298	2.4649	1.4081	365.2	227.7	91.4	23S	177E
-0185 Dec 06	11:02:08	12528	321	-27014	61	T-	p-	-0.2490	2.4025	1.3998	328.4	209.4	84.3	22N	115W
-0184 May 30	21:12:24	12522	321	-27008	66	P	h-	0.5471	1.8582	0.8502	324.7	188.8	-	21S	92E
-0184 Nov 24	20:20:18	12516	321	-27002	71	P	h-	-0.9801	1.0898	0.0300	279.9	40.9	-	19N	105E
-0183 Apr 21	02:44:24	12511	321	-26997	38	N	-a	-1.2533	0.5315	-0.4154	186.0	-	-	12S	10E
-0183 May 20	09:56:26	12510	321	-26996	76	N	a-	1.2645	0.5167	-0.4414	186.9	-	-	18S	99W
-0183 Oct 15	03:17:04	12506	321	-26991	43	N	-t	1.3408	0.4487	-0.6520	202.1	-	-	8N	0W
-0182 Apr 10	19:46:41	12500	321	-26985	48	P	-a	-0.5399	1.8436	0.8907	300.5	181.0	-	7S	116E
-0182 Oct 04	04:10:26	12494	320	-26979	53	P	-t	0.6234	1.7472	0.6815	333.7	178.8	-	3N	13W
-0181 Mar 31	10:01:20	12488	320	-26973	58	T+	pp	0.2021	2.4864	1.4880	336.6	216.4	92.0	2S	97W
-0181 Sep 23	12:01:05	12483	320	-26967	63	T-	p-	-0.1169	2.6463	1.6405	336.8	217.5	97.7	2S	130W
-0180 Mar 19	17:33:56	12477	320	-26961	68	P	t-	0.9909	1.0680	0.0121	283.1	26.5	-	3N	151E
-0180 Sep 12	02:13:12	12471	320	-26955	73	P	a-	-0.8071	1.3585	0.3955	273.5	130.1	-	7S	18E
-0179 Feb 07	01:22:33	12466	320	-26950	40	N	-t	-1.2203	0.6631	-0.4246	238.5	-	-	15N	36E
-0179 Aug 03	09:50:01	12461	319	-26944	45	N	-a	1.0943	0.8363	-0.1363	232.5	-	-	18S	95W
-0179 Sep 01	18:36:51	12460	319	-26943	83	N	a-	-1.4901	0.1049	-0.8576	86.5	-	-	11S	133E
-0178 Jan 27	04:34:32	12455	319	-26938	50	P	-t	-0.4758	2.0077	0.9627	337.3	198.4	-	19N	13W
-0178 Jul 23	21:13:10	12449	319	-26932	55	T	-a	0.3773	2.1775	1.1541	341.0	209.6	59.6	21S	94E
-0177 Jan 16	14:56:07	12444	319	-26926	60	T+	p-	0.2476	2.3997	1.4074	325.9	208.8	84.7	22N	169W
-0177 Jul 13	01:28:47	12438	319	-26920	65	T	t-	-0.3919	2.1721	1.1062	360.2	215.8	52.1	23S	30E
-0176 Jan 06	06:03:05	12432	319	-26914	70	P	a-	0.9099	1.1725	0.2040	258.5	95.6	-	24N	37W
-0176 Jul 01	01:58:26	12426	319	-26908	75	N	t-	-1.1440	0.7920	-0.2734	256.1	-	-	25S	22E
-0176 Nov 26	09:00:32	12422	318	-26903	42	N	-a	-1.1564	0.7453	-0.2728	228.2	-	-	20N	85W
-0175 May 21	19:42:44	12416	318	-26897	47	P	-t	0.8250	1.3403	0.3479	288.0	129.0	-	19S	114E
-0175 Nov 15	16:14:48	12410	318	-26891	52	P	-a	-0.5044	1.9704	0.8953	345.8	197.6	-	18N	165E
-0174 May 11	09:59:32	12405	318	-26885	57	T+	pp	0.0412	2.7567	1.8074	320.7	213.1	99.6	17S	100W
-0174 Nov 04	16:44:23	12399	318	-26879	62	T+	pp	0.1784	2.5835	1.4786	376.8	231.4	95.9	15N	157E
-0173 May 01	03:10:34	12393	318	-26873	67	P	a-	-0.6937	1.5572	0.6126	284.4	156.5	-	14S	2E

-0173	Oct 24	16:29:34	12387	317	-26867	72	P	t-	0.8541	1.3322	0.2503	310.6	117.2	-	11N	161E
-0172	Mar 21	08:15:05	12383	317	-26862	39	N	-a	1.1834	0.6953	-0.3218	226.5	-	-	2N	69W
-0172	Apr 19	18:34:09	12382	317	-26861	77	N	a-	-1.4688	0.1540	-0.8281	108.3	-	-	11S	132E
-0172	Sep 13	10:31:40	12377	317	-26856	44	N	-a	-1.2397	0.5775	-0.4109	199.8	-	-	6S	107W
-0172	Oct 12	22:23:01	12376	317	-26855	82	N	a-	1.4932	0.1305	-0.8938	102.6	-	-	8N	72E
-0171	Mar 10	13:36:12	12371	317	-26850	49	P	-t	0.4752	2.0217	0.9509	353.1	204.9	-	6N	149W
-0171	Sep 03	01:54:06	12366	317	-26844	54	P	-a	-0.5140	1.8928	0.9365	300.4	182.6	-	10S	23E
-0170	Feb 27	13:40:42	12360	317	-26838	59	T-	pp	-0.2498	2.4430	1.3570	371.5	227.8	87.4	9N	150W
-0170	Aug 23	18:10:35	12354	317	-26832	64	T+	p-	0.1927	2.4886	1.5198	322.2	210.2	91.2	13S	139E
-0169	Feb 16	15:45:08	12349	316	-26826	69	P	h-	-0.9544	1.1331	0.0809	285.5	67.1	-	13N	179E
-0169	Aug 13	06:41:49	12343	316	-26820	74	P	t-	0.9636	1.0978	0.0820	272.5	65.8	-	15S	49W
-0168	Jan 07	13:41:02	12338	316	-26815	41	N	-a	1.1029	0.8254	-0.1570	229.0	-	-	24N	151W
-0168	Jul 02	21:16:08	12333	316	-26809	46	N	-t	-1.0789	0.9135	-0.1563	273.1	-	-	25S	92E
-0168	Dec 27	05:16:18	12327	316	-26803	51	T	-p	0.4277	2.0585	1.0875	307.6	191.3	42.9	24N	26W
-0167	Jun 21	22:03:56	12321	316	-26797	56	T	pp	-0.3153	2.3074	1.2519	360.7	221.5	76.0	24S	79E
-0167	Dec 16	19:46:01	12316	316	-26791	61	T-	p-	-0.2492	2.4030	1.3984	329.5	209.8	84.4	23N	115E
-0166	Jun 11	04:06:00	12310	315	-26785	66	T	a-	0.4646	2.0078	1.0031	329.4	198.9	8.8	22S	12W
-0166	Dec 06	04:43:17	12304	315	-26779	71	P	t-	-0.9818	1.0882	0.0254	280.8	37.8	-	21N	21W
-0165	May 02	10:15:18	12300	315	-26774	38	N	-a	-1.3183	0.4109	-0.5333	165.2	-	-	15S	104W
-0165	May 31	17:14:43	12299	315	-26773	76	N	a-	1.1882	0.6554	-0.3000	207.0	-	-	20S	151E
-0165	Oct 26	11:05:53	12294	315	-26768	43	N	-t	1.3549	0.4238	-0.6788	196.9	-	-	13N	119W
-0164	Apr 21	03:21:45	12288	315	-26762	48	P	-a	-0.6048	1.7243	0.7717	295.6	172.2	-	11S	0W
-0164	Oct 14	12:08:23	12283	315	-26756	53	P	-t	0.6403	1.7163	0.6506	331.1	175.1	-	8N	134W
-0163	Apr 10	17:24:16	12277	314	-26750	58	T+	pp	0.1411	2.5988	1.5995	339.3	219.4	97.6	7S	150E
-0163	Oct 03	20:14:42	12271	314	-26744	63	T-	p-	-0.0939	2.6886	1.6828	336.1	217.4	98.6	3N	105E
-0162	Mar 31	00:36:41	12266	314	-26738	68	P	t-	0.9331	1.1739	0.1183	294.1	82.0	-	2S	44E
-0162	Sep 23	10:32:55	12260	314	-26732	73	P	a-	-0.7782	1.4124	0.4476	276.9	137.1	-	2S	108W
-0161	Feb 18	08:49:04	12255	314	-26727	40	N	-t	-1.2535	0.5999	-0.4829	227.6	-	-	12N	77W
-0161	Aug 14	17:30:43	12250	314	-26721	45	N	-a	1.1495	0.7378	-0.2403	221.4	-	-	15S	149E
-0161	Sep 13	02:46:35	12249	314	-26720	83	N	a-	-1.4592	0.1640	-0.8030	107.9	-	-	7S	9E
-0160	Feb 07	12:32:27	12244	314	-26715	50	P	-t	-0.4980	1.9639	0.9250	334.0	195.3	-	16N	133W
-0160	Aug 03	04:21:35	12239	313	-26709	55	T	-a	0.4425	2.0608	1.0314	338.8	203.5	28.0	18S	14W
-0159	Jan 26	23:22:55	12233	313	-26703	60	T+	p-	0.2311	2.4277	1.4402	325.2	209.3	86.8	20N	64E
-0159	Jul 23	08:06:24	12227	313	-26697	65	T	tp	-0.3168	2.3118	1.2420	365.3	222.8	75.2	21S	70W
-0158	Jan 16	14:44:44	12222	313	-26691	70	P	a-	0.8990	1.1914	0.2251	259.9	100.1	-	23N	167W
-0158	Jul 12	08:30:01	12216	313	-26685	75	N	t-	-1.0627	0.9413	-0.1244	274.6	-	-	24S	76W
-0158	Dec 07	17:39:01	12211	313	-26680	42	N	-a	-1.1608	0.7386	-0.2823	228.1	-	-	21N	145E
-0157	Jun 02	02:45:30	12206	313	-26674	47	P	-h	0.8997	1.2015	0.2127	275.8	102.5	-	21S	8E
-0157	Nov 27	00:29:20	12200	312	-26668	52	P	-a	-0.5094	1.9627	0.8844	346.6	197.2	-	20N	41E
-0156	May 21	17:23:00	12195	312	-26662	57	T+	pp	0.1155	2.6192	1.6722	319.1	211.6	97.0	19S	148E

-0156	Nov 15	00:43:19	12189	312	-26656	62	T+	pp	0.1710	2.5980	1.4915	377.3	231.7	96.7	18N	37E
-0155	May 11	10:37:55	12183	312	-26650	67	P	a-	-0.6225	1.6878	0.7432	291.7	169.0	-	17S	111W
-0155	Nov 04	00:34:35	12178	312	-26644	72	P	h-	0.8424	1.3534	0.2719	311.6	121.5	-	15N	39E
-0154	Apr 01	15:35:47	12173	312	-26639	39	N	-h	1.2455	0.5816	-0.4361	210.2	-	-	2S	179E
-0154	May 01	01:49:58	12172	312	-26638	77	N	h-	-1.4050	0.2718	-0.7118	142.8	-	-	15S	21E
-0154	Sep 24	18:44:41	12168	311	-26633	44	N	-a	-1.2634	0.5343	-0.4545	192.5	-	-	2S	129E
-0154	Oct 24	06:46:15	12167	311	-26632	82	N	a-	1.4771	0.1596	-0.8640	112.8	-	-	12N	55W
-0153	Mar 21	20:39:07	12162	311	-26627	49	P	-t	0.5343	1.9127	0.8432	349.0	197.1	-	2N	103E
-0153	Sep 14	10:08:02	12156	311	-26621	54	P	-a	-0.5482	1.8314	0.8725	298.0	178.2	-	6S	102W
-0152	Mar 09	20:48:14	12151	311	-26615	59	T-	pp	-0.1991	2.5339	1.4523	372.4	230.5	94.7	5N	102E
-0152	Sep 03	02:08:31	12145	311	-26609	64	T+	p-	0.1504	2.5688	1.5948	324.4	212.0	94.6	9S	18E
-0151	Feb 26	23:21:44	12140	311	-26603	69	P	h-	-0.9142	1.2037	0.1579	290.7	92.4	-	9N	64E
-0151	Aug 23	14:10:00	12134	311	-26597	74	P	t-	0.9151	1.1901	0.1678	282.2	93.3	-	12S	162W
-0150	Jan 17	22:18:11	12130	310	-26592	41	N	-a	1.1118	0.8072	-0.1712	226.3	-	-	22N	80E
-0150	Jul 14	03:44:42	12124	310	-26586	46	N	-t	-1.1596	0.7669	-0.3056	254.3	-	-	24S	5W
-0149	Jan 07	14:02:35	12118	310	-26580	51	T	-a	0.4353	2.0442	1.0742	307.2	190.7	39.7	23N	157W
-0149	Jul 03	04:38:09	12113	310	-26574	56	T	-t	-0.3965	2.1580	1.1035	355.3	213.8	51.1	24S	19W
-0149	Dec 28	04:25:01	12107	310	-26568	61	T-	p-	-0.2458	2.4101	1.4040	330.6	210.5	85.0	23N	15W
-0148	Jun 21	11:05:33	12102	310	-26562	66	T	a-	0.3858	2.1511	1.1491	332.9	206.3	58.1	23S	117W
-0148	Dec 16	13:03:26	12096	310	-26556	71	P	t-	-0.9815	1.0899	0.0249	281.9	37.4	-	23N	146W
-0147	May 12	17:43:16	12092	309	-26551	38	N	-a	-1.3860	0.2858	-0.6564	139.2	-	-	19S	143E
-0147	Jun 11	00:34:13	12091	309	-26550	76	N	a-	1.1119	0.7944	-0.1591	224.1	-	-	22S	40E
-0147	Nov 05	19:00:34	12086	309	-26545	43	N	-t	1.3645	0.4068	-0.6970	193.1	-	-	16N	122E
-0146	May 02	10:50:20	12081	309	-26539	48	P	-a	-0.6751	1.5955	0.6427	289.5	160.8	-	15S	114W
-0146	Oct 25	20:14:55	12075	309	-26533	53	P	-t	0.6507	1.6968	0.6317	329.1	172.6	-	12N	103E
-0145	Apr 22	00:37:43	12069	309	-26527	58	T+	pp	0.0729	2.7246	1.7240	341.6	221.7	101.4	11S	40E
-0145	Oct 15	04:38:22	12064	309	-26521	63	T-	p-	-0.0783	2.7170	1.7116	335.3	217.0	98.9	7N	22W
-0144	Apr 10	07:29:48	12058	308	-26515	68	P	t-	0.8680	1.2934	0.2379	305.5	114.5	-	6S	62W
-0144	Oct 03	19:00:58	12053	308	-26509	73	P	a-	-0.7558	1.4543	0.4878	279.4	142.1	-	2N	123E
-0143	Feb 28	16:07:42	12048	308	-26504	40	N	-t	-1.2931	0.5244	-0.5531	213.7	-	-	8N	172E
-0143	Aug 25	01:17:33	12043	308	-26498	45	N	-a	1.1990	0.6499	-0.3340	210.5	-	-	11S	31E
-0143	Sep 23	11:03:55	12042	308	-26497	83	N	a-	-1.4346	0.2114	-0.7602	122.3	-	-	3S	117W
-0142	Feb 17	20:23:05	12037	308	-26492	50	P	-t	-0.5272	1.9069	0.8746	330.0	191.1	-	12N	109E
-0142	Aug 14	11:35:14	12032	308	-26486	55	P	-a	0.5026	1.9538	0.9180	336.3	196.6	-	15S	123W
-0141	Feb 07	07:43:56	12026	308	-26480	60	T+	p-	0.2089	2.4658	1.4835	324.6	210.0	89.4	17N	61W
-0141	Aug 03	14:49:54	12021	307	-26474	65	T-	pp	-0.2466	2.4429	1.3689	369.4	227.8	88.5	19S	172W
-0140	Jan 27	23:20:51	12015	307	-26468	70	P	a-	0.8835	1.2186	0.2547	261.9	106.0	-	20N	64E
-0140	Jul 22	15:08:47	12010	307	-26462	75	P	t-	-0.9861	1.0821	0.0158	289.7	30.8	-	22S	176W
-0140	Dec 18	02:16:30	12005	307	-26457	42	N	-a	-1.1655	0.7312	-0.2920	227.9	-	-	22N	16E
-0139	Jun 12	09:49:59	12000	307	-26451	47	P	-h	0.9738	1.0639	0.0783	262.3	63.2	-	22S	99W

-0139	Dec 07	08:44:13	11994	307	-26445	52	P	-h	-0.5136	1.9563	0.8755	347.4	197.0	-	22N	82W
-0138	Jun 02	00:46:01	11989	307	-26439	57	T+	-p	0.1906	2.4807	1.5354	316.9	209.0	91.7	22S	37E
-0138	Nov 26	08:43:49	11983	306	-26433	62	T+	pp	0.1646	2.6101	1.5029	377.6	232.0	97.3	21N	83W
-0137	May 22	18:03:16	11978	306	-26427	67	P	a-	-0.5498	1.8216	0.8764	298.3	179.6	-	20S	137E
-0137	Nov 15	08:44:23	11972	306	-26421	72	P	h-	0.8341	1.3681	0.2878	312.0	124.4	-	19N	84W
-0136	Apr 11	22:48:39	11968	306	-26416	39	N	-h	1.3132	0.4579	-0.5607	189.5	-	-	6S	68E
-0136	May 11	09:01:45	11967	306	-26415	77	N	h-	-1.3383	0.3952	-0.5904	170.9	-	-	18S	88W
-0136	Oct 05	03:05:35	11962	306	-26410	44	N	-a	-1.2816	0.5009	-0.4881	186.5	-	-	2N	2E
-0136	Nov 03	15:14:51	11961	306	-26409	82	N	a-	1.4647	0.1817	-0.8405	119.7	-	-	16N	177E
-0135	Apr 01	03:33:01	11957	306	-26404	49	P	-t	0.6001	1.7915	0.7231	343.5	186.8	-	3S	2W
-0135	Sep 24	18:29:54	11951	306	-26398	54	P	-a	-0.5761	1.7815	0.8200	295.9	174.2	-	1S	131E
-0134	Mar 21	03:45:03	11946	305	-26392	59	T-	pp	-0.1391	2.6416	1.5645	372.9	232.9	100.7	1N	4W
-0134	Sep 14	10:14:59	11940	305	-26386	64	T+	pp	0.1157	2.6352	1.6559	326.3	213.3	96.7	5S	105W
-0133	Mar 10	06:49:00	11935	305	-26380	69	P	h-	-0.8654	1.2900	0.2507	296.6	114.5	-	5N	50W
-0133	Sep 03	21:46:18	11929	305	-26374	74	P	t-	0.8740	1.2689	0.2400	290.3	110.8	-	8S	83E
-0132	Jan 29	06:48:25	11925	305	-26369	41	N	-a	1.1269	0.7773	-0.1969	222.1	-	-	20N	48W
-0132	Feb 27	16:56:30	11924	305	-26368	79	N	a-	-1.5275	0.0487	-0.9383	61.0	-	-	8N	159E
-0132	Jul 24	10:19:36	11919	305	-26363	46	N	-t	-1.2347	0.6306	-0.4449	234.0	-	-	22S	104W
-0131	Jan 17	22:44:13	11914	304	-26357	51	T	-a	0.4467	2.0225	1.0539	306.7	189.8	34.0	22N	72E
-0131	Jul 13	11:16:34	11908	304	-26351	56	P	-t	-0.4750	2.0136	0.9598	349.1	204.4	-	23S	119W
-0130	Jan 07	13:01:00	11903	304	-26345	61	T-	p-	-0.2404	2.4205	1.4133	331.8	211.3	85.9	23N	143W
-0130	Jul 02	18:08:17	11897	304	-26339	66	T	a-	0.3082	2.2923	1.2926	335.4	211.9	77.3	23S	137E
-0130	Dec 27	21:20:28	11892	304	-26333	71	P	t-	-0.9794	1.0945	0.0279	283.2	39.7	-	23N	91E
-0129	May 24	01:09:11	11887	304	-26328	38	N	-a	-1.4555	0.1576	-0.7832	104.5	-	-	21S	30E
-0129	Jun 22	07:56:09	11887	304	-26327	76	N	a-	1.0369	0.9314	-0.0208	238.6	-	-	23S	71W
-0129	Nov 17	03:00:48	11882	304	-26322	43	N	-t	1.3700	0.3970	-0.7074	190.8	-	-	20N	1E
-0128	May 12	18:15:45	11877	303	-26316	48	P	-a	-0.7473	1.4634	0.5097	282.4	146.5	-	18S	134E
-0128	Nov 05	04:27:28	11871	303	-26310	53	P	-t	0.6571	1.6845	0.6205	327.4	171.0	-	16N	21W
-0127	May 02	07:46:01	11866	303	-26304	58	T+	pp	0.0013	2.8567	1.8544	343.4	223.0	102.9	14S	68W
-0127	Oct 25	13:08:43	11860	303	-26298	63	T-	p-	-0.0677	2.7361	1.7314	334.4	216.6	99.0	11N	151W
-0126	Apr 21	14:14:35	11855	303	-26292	68	P	t-	0.7966	1.4244	0.3687	316.6	140.2	-	10S	165W
-0126	Oct 15	03:36:22	11849	303	-26286	73	P	a-	-0.7396	1.4849	0.5168	281.2	145.5	-	7N	7W
-0125	Mar 11	23:17:52	11845	303	-26281	40	N	-t	-1.3397	0.4362	-0.6360	195.9	-	-	4N	63E
-0125	Apr 10	15:04:25	11844	303	-26280	78	Nb	t-	1.5507	0.0506	-1.0243	69.9	-	-	5S	176W
-0125	Sep 05	09:11:54	11839	302	-26275	45	N	-a	1.2417	0.5745	-0.4152	200.2	-	-	7S	89W
-0125	Oct 04	19:28:13	11839	302	-26274	83	N	a-	-1.4161	0.2475	-0.7285	132.2	-	-	2N	115E
-0124	Feb 29	04:06:21	11834	302	-26269	50	P	-t	-0.5633	1.8374	0.8116	325.2	185.6	-	9N	9W
-0124	Aug 24	18:56:25	11829	302	-26263	55	P	-a	0.5555	1.8600	0.8178	333.8	189.4	-	12S	125E
-0123	Feb 17	15:57:21	11823	302	-26257	60	T+	p-	0.1800	2.5161	1.5391	324.1	210.9	92.2	13N	174E
-0123	Aug 13	21:40:09	11818	302	-26251	65	T-	pp	-0.1823	2.5631	1.4847	372.4	231.4	96.7	16S	85E



-0122 Feb 07	07:49:12	11812	302	-26245	70	P	a-	0.8621	1.2567	0.2953	264.8	113.5	-	17N	63W
-0122 Aug 02	21:55:57	11807	302	-26239	75	P	t-	-0.9157	1.2117	0.1446	301.8	91.3	-	20S	81E
-0122 Dec 29	10:49:00	11802	301	-26234	42	N	-a	-1.1734	0.7175	-0.3074	226.9	-	-	22N	111W
-0121 Jun 23	16:58:05	11797	301	-26228	47	N	-h	1.0455	0.9312	-0.0519	247.9	-	-	23S	154E
-0121 Dec 18	16:57:01	11792	301	-26222	52	P	-h	-0.5184	1.9484	0.8659	348.0	196.7	-	23N	155E
-0120 Jun 12	08:09:38	11786	301	-26216	57	T+	-p	0.2654	2.3429	1.3987	314.1	205.2	83.3	23S	75W
-0120 Dec 06	16:45:54	11781	301	-26210	62	T+	pp	0.1596	2.6192	1.5121	377.7	232.2	97.7	23N	156E
-0119 Jun 02	01:25:54	11775	301	-26204	67	T	a-	-0.4753	1.9588	1.0124	304.3	188.7	16.7	22S	26E
-0119 Nov 25	16:58:58	11770	300	-26198	72	P	h-	0.8288	1.3769	0.2984	311.8	126.2	-	21N	152E
-0118 Apr 23	05:51:34	11766	300	-26193	39	N	-h	1.3876	0.3220	-0.6979	161.5	-	-	10S	39W
-0118 May 22	16:07:01	11765	300	-26192	77	N	h-	-1.2670	0.5272	-0.4610	195.7	-	-	21S	165E
-0118 Oct 16	11:35:27	11760	300	-26187	44	N	-a	-1.2933	0.4794	-0.5096	182.4	-	-	7N	127W
-0118 Nov 14	23:49:52	11759	300	-26186	82	N	a-	1.4568	0.1953	-0.8252	123.6	-	-	19N	48E
-0117 Apr 12	10:18:09	11755	300	-26181	49	P	-t	0.6722	1.6587	0.5912	336.5	172.9	-	7S	105W
-0117 Oct 06	02:59:17	11749	300	-26175	54	P	-a	-0.5978	1.7431	0.7790	294.3	170.9	-	3N	2E
-0116 Mar 31	10:36:01	11744	300	-26169	59	T-	pp	-0.0741	2.7587	1.6861	373.0	234.4	104.6	3S	109W
-0116 Sep 24	18:28:19	11739	300	-26163	64	T+	pp	0.0875	2.6897	1.7051	328.0	214.2	98.0	0S	130E
-0115 Mar 20	14:10:50	11733	299	-26157	69	P	h-	-0.8110	1.3864	0.3536	302.7	133.6	-	1N	162W
-0115 Sep 14	05:28:30	11728	299	-26151	74	P	t-	0.8384	1.3376	0.3021	297.2	123.6	-	4S	35W
-0114 Feb 08	15:13:00	11723	299	-26146	41	N	-a	1.1472	0.7379	-0.2319	216.8	-	-	17N	174W
-0114 Mar 10	00:50:56	11722	299	-26145	79	N	a-	-1.4835	0.1265	-0.8548	97.3	-	-	4N	39E
-0114 Aug 04	17:01:23	11718	299	-26140	46	N	-t	-1.3039	0.5052	-0.5735	212.2	-	-	20S	155E
-0113 Jan 29	07:18:07	11713	299	-26134	51	T	-a	0.4646	1.9889	1.0218	305.7	188.2	21.9	19N	56W
-0113 Jul 24	18:04:07	11707	299	-26128	56	P	-t	-0.5467	1.8819	0.8283	342.5	194.0	-	21S	139E
-0112 Jan 18	21:29:36	11702	299	-26122	61	T-	p-	-0.2291	2.4415	1.4336	333.2	212.5	87.5	21N	90E
-0112 Jul 13	01:18:06	11697	298	-26116	66	T+	p-	0.2355	2.4248	1.4269	336.9	215.7	88.5	22S	29E
-0111 Jan 07	05:31:22	11691	298	-26110	71	P	t-	-0.9728	1.1071	0.0396	285.3	47.4	-	22N	32W
-0111 Jun 03	08:34:41	11687	298	-26105	38	Ne	-a	-1.5255	0.0286	-0.9114	45.0	-	-	24S	82W
-0111 Jul 02	15:21:54	11686	298	-26104	76	P	a-	0.9641	1.0644	0.1130	251.0	72.8	-	23S	178E
-0111 Nov 27	11:03:15	11681	298	-26099	43	N	-t	1.3737	0.3900	-0.7140	189.1	-	-	22N	119W
-0110 May 24	01:35:54	11676	298	-26093	48	P	-a	-0.8234	1.3246	0.3694	273.8	127.7	-	21S	23E
-0110 Nov 16	12:46:07	11671	298	-26087	53	P	-t	0.6593	1.6797	0.6174	326.1	170.2	-	19N	146W
-0109 May 13	14:47:22	11665	298	-26081	58	T-	pp	-0.0751	2.7225	1.7177	344.5	223.1	101.8	18S	175W
-0109 Nov 05	21:45:27	11660	297	-26075	63	T-	p-	-0.0617	2.7467	1.7430	333.4	216.2	99.0	15N	79E
-0108 May 01	20:52:07	11655	297	-26069	68	P	t-	0.7197	1.5659	0.5096	327.3	161.6	-	14S	94E
-0108 Oct 25	12:18:50	11649	297	-26063	73	P	a-	-0.7289	1.5052	0.5357	282.3	147.6	-	11N	139W
-0107 Mar 22	06:19:54	11645	297	-26058	40	N	-t	-1.3930	0.3356	-0.7311	172.9	-	-	1S	45W
-0107 Apr 20	21:38:00	11644	297	-26057	78	N	t-	1.4756	0.1867	-0.8851	132.4	-	-	9S	84E
-0107 Sep 15	17:12:53	11640	297	-26052	45	N	-a	1.2783	0.5104	-0.4854	190.6	-	-	3S	149E
-0107 Oct 15	03:59:32	11639	297	-26051	83	N	a-	-1.4038	0.2724	-0.7079	138.7	-	-	6N	14W

-0106 Mar 11	11:42:41	11634	297	-26046	50	P	-t	-0.6060	1.7558	0.7366	319.6	178.5	-	4N	124W
-0106 Sep 05	02:24:26	11629	297	-26040	55	P	-h	0.6016	1.7787	0.7299	331.4	182.2	-	8S	12E
-0105 Mar 01	00:03:26	11624	296	-26034	60	T+	p-	0.1445	2.5786	1.6067	323.7	211.9	95.0	9N	51E
-0105 Aug 25	04:38:51	11618	296	-26028	65	T-	pp	-0.1252	2.6700	1.5872	374.6	233.6	101.6	12S	21W
-0104 Feb 18	16:11:22	11613	296	-26022	70	P	a-	0.8358	1.3037	0.3448	268.2	121.9	-	14N	170E
-0104 Aug 13	04:50:51	11608	296	-26016	75	P	t-	-0.8508	1.3313	0.2632	311.6	120.8	-	17S	23W
-0103 Jan 08	19:17:29	11603	296	-26011	42	N	-a	-1.1839	0.6989	-0.3273	225.0	-	-	22N	122E
-0103 Feb 07	07:26:45	11602	296	-26010	80	N	a-	1.5542	0.0017	-0.9891	11.5	-	-	18N	59W
-0103 Jul 04	00:10:42	11598	296	-26005	47	N	-a	1.1140	0.8045	-0.1766	232.6	-	-	22S	45E
-0103 Aug 02	10:16:00	11597	296	-26004	85	Nb	a-	-1.5381	0.0434	-0.9717	60.2	-	-	20S	105W
-0103 Dec 29	01:05:51	11593	296	-25999	52	P	-t	-0.5261	1.9348	0.8512	348.3	196.0	-	23N	33E
-0102 Jun 23	15:35:11	11587	295	-25993	57	T	-p	0.3390	2.2076	1.2638	310.6	200.3	71.0	23S	174E
-0102 Dec 18	00:46:18	11582	295	-25987	62	T+	pp	0.1531	2.6306	1.5245	377.6	232.4	98.4	24N	37E
-0101 Jun 13	08:49:26	11577	295	-25981	67	T	a-	-0.4017	2.0949	1.1465	309.5	196.2	55.2	24S	86W
-0101 Dec 07	01:13:37	11571	295	-25975	72	P	h-	0.8229	1.3864	0.3106	311.5	128.2	-	23N	28E
-0100 May 03	12:49:15	11567	295	-25970	39	N	-h	1.4649	0.1810	-0.8407	123.1	-	-	14S	145W
-0100 Jun 01	23:11:21	11566	295	-25969	77	N	h-	-1.1956	0.6599	-0.3316	217.1	-	-	23S	58E
-0100 Oct 26	20:11:52	11562	295	-25964	44	N	-a	-1.3004	0.4663	-0.5226	179.7	-	-	11N	103E
-0100 Nov 25	08:27:40	11561	295	-25963	82	N	a-	1.4507	0.2054	-0.8128	126.2	-	-	22N	82W

# 1ST CENTURY BCE

**In the 1st century BCE the total number of lunar eclipses was 253 lunar eclipses: 94 penumbral lunar eclipses, 98 partial lunar eclipses, 61 total lunar eclipses (50 central total lunar eclipses, 11 non-central total lunar eclipses).**

CALENDAR	TD	ΔT	ΔT	LUNA	SAROS	ECL.	QSE	GAMMA	PEN	UM	PEN	PAR	TOTAL	ZEN	ZEN
DATE	OF	s	SIGMA	NUM	NUM	TYPE			MAG.	MAG.	DUR.	DUR.	DUR.	LAT	LONG
	GREATEST		S								m	m	m	°	°
	ECLIPSE														
-0099 Apr 22	16:55:02	11556	294	-25958	49	P	-t	0.7504	1.5149	0.4481	327.6	154.3	-	11S	154E

-0099 Oct 16	11:35:54	11551	294	-25952	54	P	-a	-0.6136	1.7152	0.7486	293.1	168.4	-	7N	129W
-0098 Apr 11	17:18:35	11546	294	-25946	59	T-	pp	-0.0018	2.8892	1.8208	372.3	234.8	106.1	7S	149E
-0098 Oct 06	02:49:41	11540	294	-25940	64	T+	pp	0.0662	2.7314	1.7416	329.5	214.9	98.8	4N	3E
-0097 Mar 31	21:24:32	11535	294	-25934	69	P	h-	-0.7489	1.4973	0.4708	309.0	150.9	-	4S	88E
-0097 Sep 25	13:19:52	11530	294	-25928	74	P	t-	0.8109	1.3912	0.3493	302.7	132.3	-	0N	154W
-0096 Feb 19	23:30:03	11526	294	-25923	41	N	-a	1.1743	0.6858	-0.2795	209.6	-	-	13N	60E
-0096 Mar 20	08:38:11	11525	294	-25922	79	N	a-	-1.4329	0.2165	-0.7591	125.7	-	-	0S	80W
-0096 Aug 14	23:50:34	11520	293	-25917	46	N	-t	-1.3670	0.3912	-0.6908	188.9	-	-	17S	52E
-0096 Sep 13	16:41:49	11519	293	-25916	84	Nb	t-	1.5683	0.0230	-1.0614	47.1	-	-	4S	156E
-0095 Feb 08	15:45:37	11515	293	-25911	51	P	-a	0.4878	1.9455	0.9800	304.3	186.0	-	16N	176E
-0095 Aug 04	00:59:01	11510	293	-25905	56	P	-t	-0.6133	1.7597	0.7061	335.5	182.5	-	19S	34E
-0094 Jan 29	05:51:16	11504	293	-25899	61	T-	p-	-0.2130	2.4712	1.4631	334.7	213.9	89.6	19N	36W
-0094 Jul 24	08:33:59	11499	293	-25893	66	T+	p-	0.1668	2.5502	1.5535	337.5	218.0	95.5	21S	80W
-0093 Jan 18	13:36:11	11494	293	-25887	71	P	t-	-0.9620	1.1272	0.0593	288.0	58.0	-	20N	153W
-0093 Jul 13	22:52:17	11489	293	-25881	76	P	a-	0.8949	1.1915	0.2401	261.4	104.1	-	22S	65E
-0093 Dec 08	19:06:44	11484	292	-25876	43	N	-t	1.3768	0.3837	-0.7192	187.4	-	-	24N	120E
-0092 Jun 03	08:55:34	11479	292	-25870	48	P	-a	-0.8992	1.1866	0.2292	264.0	102.9	-	23S	88W
-0092 Nov 26	21:08:18	11474	292	-25864	53	P	-h	0.6595	1.6781	0.6182	324.9	169.8	-	22N	89E
-0091 May 23	21:44:14	11468	292	-25858	58	T-	pp	-0.1543	2.5786	1.5711	344.7	221.8	97.5	20S	80E
-0091 Nov 16	06:26:32	11463	292	-25852	63	T-	p-	-0.0586	2.7516	1.7493	332.5	215.7	98.9	18N	52W
-0090 May 13	03:24:24	11458	292	-25846	68	P	t-	0.6386	1.7150	0.6578	337.2	179.6	-	17S	5W
-0090 Nov 05	21:05:46	11453	292	-25840	73	P	a-	-0.7220	1.5184	0.5479	283.0	148.9	-	15N	88E
-0089 Apr 02	13:14:51	11448	291	-25835	40	N	-t	-1.4521	0.2245	-0.8369	142.4	-	-	5S	150W
-0089 May 02	04:07:21	11447	291	-25834	78	N	t-	1.3964	0.3306	-0.7384	173.7	-	-	13S	15W
-0089 Sep 27	01:21:48	11443	291	-25829	45	N	-a	1.3078	0.4592	-0.5425	182.5	-	-	1N	25E
-0089 Oct 26	12:36:31	11442	291	-25828	83	N	a-	-1.3963	0.2881	-0.6961	142.9	-	-	10N	144W
-0088 Mar 21	19:12:34	11438	291	-25823	50	P	-t	-0.6546	1.6632	0.6505	313.1	169.7	-	0N	121E
-0088 Sep 15	09:59:21	11433	291	-25817	55	P	-h	0.6411	1.7095	0.6543	329.2	175.2	-	4S	103W
-0087 Mar 11	08:02:09	11427	291	-25811	60	T+	p-	0.1024	2.6533	1.6866	323.3	212.7	97.4	5N	70W
-0087 Sep 04	11:46:21	11422	291	-25805	65	T-	pp	-0.0757	2.7630	1.6759	376.2	234.8	104.2	9S	129W
-0086 Mar 01	00:23:11	11417	291	-25799	70	P	a-	0.8012	1.3658	0.4094	272.6	131.6	-	10N	46E
-0086 Aug 24	11:56:42	11412	290	-25793	75	P	t-	-0.7939	1.4362	0.3669	319.3	140.1	-	13S	131W
-0085 Jan 20	03:37:57	11407	290	-25788	42	N	-a	-1.2002	0.6693	-0.3576	221.6	-	-	20N	3W
-0085 Feb 18	15:37:05	11406	290	-25787	80	N	a-	1.5311	0.0439	-0.9466	58.1	-	-	14N	178E
-0085 Jul 15	07:29:30	11402	290	-25782	47	N	-a	1.1782	0.6859	-0.2938	216.6	-	-	21S	65W
-0085 Aug 13	17:39:51	11401	290	-25781	85	N	a-	-1.4779	0.1536	-0.8609	111.7	-	-	17S	144E
-0084 Jan 09	09:08:34	11397	290	-25776	52	P	-t	-0.5381	1.9129	0.8290	348.0	194.6	-	22N	87W
-0084 Jul 03	23:04:15	11392	290	-25770	57	T	-a	0.4098	2.0778	1.1337	306.7	194.4	52.6	23S	61E
-0084 Dec 28	08:45:15	11386	290	-25764	62	T+	pp	0.1453	2.6439	1.5396	377.5	232.6	99.1	24N	82W
-0083 Jun 23	16:11:27	11381	290	-25758	67	T	p-	-0.3274	2.2325	1.2815	314.1	202.4	73.3	24S	164E

-0083	Dec 17	09:30:21	11376	289	-25752	72	P	a-	0.8180	1.3937	0.3212	311.0	129.8	-	24N	95W
-0082	May 14	19:39:46	11372	289	-25747	39	Ne	-t	1.5464	0.0327	-0.9913	53.2	-	-	17S	111E
-0082	Jun 13	06:12:23	11371	289	-25746	77	N	t-	-1.1225	0.7961	-0.1993	236.2	-	-	24S	47W
-0082	Nov 07	04:54:28	11366	289	-25741	44	N	-a	-1.3033	0.4608	-0.5275	178.3	-	-	14N	29W
-0082	Dec 06	17:07:43	11366	289	-25740	82	N	a-	1.4459	0.2127	-0.8027	127.9	-	-	24N	149E
-0081	May 03	23:25:51	11361	289	-25735	49	P	-t	0.8327	1.3637	0.2972	316.7	128.8	-	14S	55E
-0081	Oct 27	20:18:50	11356	289	-25729	54	P	-a	-0.6241	1.6972	0.7283	292.5	166.7	-	12N	100E
-0080	Apr 21	23:57:19	11351	289	-25723	59	T+	pp	0.0742	2.7542	1.6900	370.8	233.9	104.6	11S	47E
-0080	Oct 16	11:16:07	11346	289	-25717	64	T+	pp	0.0498	2.7639	1.7691	330.9	215.4	99.2	8N	125W
-0079	Apr 11	04:34:31	11340	288	-25711	69	P	a-	-0.6826	1.6158	0.5955	314.9	165.8	-	8S	21W
-0079	Oct 05	21:17:05	11335	288	-25705	74	P	t-	0.7889	1.4348	0.3867	307.2	138.9	-	5N	85E
-0078	Mar 02	07:38:57	11331	288	-25700	41	N	-a	1.2084	0.6210	-0.3399	200.3	-	-	9N	63W
-0078	Mar 31	16:18:20	11330	288	-25699	79	N	a-	-1.3759	0.3184	-0.6519	150.5	-	-	4S	163E
-0078	Aug 26	06:48:50	11326	288	-25694	46	N	-t	-1.4224	0.2912	-0.7941	164.6	-	-	13S	54W
-0078	Sep 25	00:09:01	11325	288	-25693	84	N	t-	1.5358	0.0851	-1.0042	90.3	-	-	1N	43E
-0077	Feb 20	00:04:13	11320	288	-25688	51	P	-a	0.5182	1.8889	0.9250	302.4	182.7	-	13N	51E
-0077	Aug 15	08:04:02	11315	288	-25682	56	P	-t	-0.6721	1.6519	0.5981	328.5	170.5	-	16S	73W
-0076	Feb 09	14:03:14	11310	288	-25676	61	T-	pp	-0.1895	2.5144	1.5061	336.4	215.6	92.3	15N	159W
-0076	Aug 03	15:58:51	11305	287	-25670	66	T+	pp	0.1047	2.6637	1.6678	337.5	219.1	99.3	18S	168E
-0075	Jan 28	21:31:58	11300	287	-25664	71	P	t-	-0.9444	1.1594	0.0915	291.9	71.9	-	18N	88E
-0075	Jul 24	06:27:39	11295	287	-25658	76	P	a-	0.8293	1.3120	0.3602	270.1	125.1	-	20S	49W
-0075	Dec 19	03:09:26	11290	287	-25653	43	N	-t	1.3808	0.3754	-0.7254	185.3	-	-	25N	0E
-0074	Jun 14	16:13:08	11285	287	-25647	48	P	-a	-0.9762	1.0467	0.0864	252.6	64.6	-	24S	162E
-0074	Jul 13	23:31:17	11284	287	-25646	86	Nb	a-	1.5360	0.0135	-0.9346	31.1	-	-	21S	54E
-0074	Dec 08	05:31:39	11280	287	-25641	53	P	-h	0.6595	1.6767	0.6198	323.6	169.5	-	23N	37W
-0073	Jun 04	04:37:40	11275	287	-25635	58	T-	-p	-0.2354	2.4316	1.4207	344.0	218.9	89.3	22S	24W
-0073	Nov 27	15:11:23	11270	286	-25629	63	T-	p-	-0.0578	2.7520	1.7517	331.5	215.2	98.8	21N	177E
-0072	May 23	09:51:57	11264	286	-25623	68	P	t-	0.5542	1.8706	0.8121	346.2	194.7	-	20S	103W
-0072	Nov 16	05:57:01	11259	286	-25617	73	P	a-	-0.7186	1.5249	0.5536	283.3	149.5	-	18N	45W
-0071	Apr 12	20:03:43	11255	286	-25612	40	Ne	-t	-1.5162	0.1044	-0.9518	97.7	-	-	9S	106E
-0071	May 12	10:32:13	11254	286	-25611	78	N	t-	1.3127	0.4830	-0.5835	206.6	-	-	16S	113W
-0071	Oct 07	09:37:28	11250	286	-25606	45	N	-a	1.3310	0.4195	-0.5879	175.8	-	-	6N	100W
-0071	Nov 05	21:18:39	11249	286	-25605	83	N	a-	-1.3938	0.2945	-0.6934	144.8	-	-	14N	84E
-0070	Apr 02	02:35:14	11245	286	-25600	50	P	-t	-0.7099	1.5586	0.5522	305.5	158.3	-	4S	9E
-0070	Sep 26	17:42:18	11239	286	-25594	55	P	-h	0.6729	1.6542	0.5928	327.5	168.9	-	1N	139E
-0069	Mar 22	15:54:18	11234	285	-25588	60	T+	pp	0.0543	2.7390	1.7771	322.7	213.2	99.1	1N	170E
-0069	Sep 15	19:02:11	11229	285	-25582	65	T-	pp	-0.0333	2.8429	1.7517	377.3	235.4	105.3	4S	120E
-0068	Mar 11	08:28:41	11224	285	-25576	70	P	a-	0.7617	1.4373	0.4831	277.3	141.5	-	5N	77W
-0068	Sep 03	19:12:01	11219	285	-25570	75	P	t-	-0.7441	1.5282	0.4578	325.2	154.0	-	9S	119E
-0067	Jan 30	11:51:46	11215	285	-25565	42	N	-a	-1.2211	0.6313	-0.3961	216.7	-	-	17N	127W

-0067	Feb 28	23:39:39	11214	285	-25564	80	N	a-	1.5027	0.0959	-0.8943	85.6	-	-	10N	56E
-0067	Jul 25	14:54:14	11209	285	-25559	47	N	-a	1.2381	0.5755	-0.4033	199.9	-	-	19S	176W
-0067	Aug 24	01:12:18	11209	285	-25558	85	N	a-	-1.4237	0.2529	-0.7612	141.5	-	-	14S	29E
-0066	Jan 19	17:04:51	11204	285	-25553	52	P	-t	-0.5546	1.8826	0.7990	347.3	192.4	-	20N	154E
-0066	Jul 15	06:38:04	11199	284	-25547	57	T	-a	0.4766	1.9557	1.0108	302.3	187.6	15.5	22S	53W
-0065	Jan 08	16:37:55	11194	284	-25541	62	T+	pp	0.1326	2.6660	1.5641	377.2	233.0	100.2	23N	160E
-0065	Jul 04	23:37:32	11189	284	-25535	67	T-	p-	-0.2572	2.3629	1.4088	317.9	207.0	84.5	24S	52E
-0065	Dec 28	17:44:16	11184	284	-25529	72	P	a-	0.8107	1.4050	0.3366	310.7	132.2	-	24N	142E
-0064	Jun 23	13:14:09	11179	284	-25523	77	N	t-	-1.0507	0.9300	-0.0697	252.9	-	-	25S	153W
-0064	Nov 17	13:40:23	11174	284	-25518	44	N	-a	-1.3039	0.4592	-0.5281	177.6	-	-	18N	161W
-0064	Dec 17	01:46:59	11173	284	-25517	82	N	a-	1.4403	0.2213	-0.7906	129.9	-	-	25N	20E
-0063	May 14	05:51:26	11169	284	-25512	49	P	-t	0.9182	1.2067	0.1403	303.5	90.6	-	17S	43W
-0063	Nov 07	05:06:46	11164	283	-25506	54	P	-a	-0.6306	1.6861	0.7154	292.1	165.6	-	15N	33W
-0062	May 03	06:29:17	11159	283	-25500	59	T+	pp	0.1563	2.6017	1.5413	368.2	231.3	99.5	15S	52W
-0062	Oct 27	19:49:30	11154	283	-25494	64	T+	pp	0.0398	2.7847	1.7853	332.2	215.9	99.4	12N	106E
-0061	Apr 22	11:38:36	11149	283	-25488	69	P	a-	-0.6103	1.7455	0.7309	320.6	179.1	-	12S	129W
-0061	Oct 17	05:21:06	11144	283	-25482	74	P	t-	0.7732	1.4665	0.4126	310.9	143.3	-	9N	37W
-0060	Mar 12	15:40:18	11139	283	-25477	41	N	-a	1.2491	0.5444	-0.4124	188.5	-	-	5N	175E
-0060	Apr 10	23:52:54	11138	283	-25476	79	N	a-	-1.3137	0.4300	-0.5353	172.5	-	-	8S	48E
-0060	Sep 05	13:56:27	11134	283	-25471	46	N	-t	-1.4699	0.2055	-0.8830	139.4	-	-	9S	162W
-0060	Oct 05	07:44:37	11133	283	-25470	84	N	t-	1.5101	0.1345	-0.9593	113.2	-	-	5N	73W
-0059	Mar 02	08:14:41	11129	282	-25465	51	P	-a	0.5552	1.8202	0.8580	299.8	178.3	-	9N	73W
-0059	Aug 25	15:17:49	11124	282	-25459	56	P	-t	-0.7245	1.5561	0.5018	321.7	158.2	-	13S	177E
-0058	Feb 19	22:06:48	11119	282	-25453	61	T-	pp	-0.1599	2.5688	1.5605	338.1	217.4	95.2	12N	79E
-0058	Aug 14	23:31:58	11114	282	-25447	66	T+	pp	0.0485	2.7666	1.7711	337.0	219.3	101.0	15S	54E
-0057	Feb 09	05:18:43	11109	282	-25441	71	P	t-	-0.9201	1.2038	0.1363	296.7	87.4	-	15N	29W
-0057	Aug 04	14:10:12	11104	282	-25435	76	P	a-	0.7692	1.4228	0.4700	277.3	140.4	-	18S	166W
-0057	Dec 30	11:10:25	11099	282	-25430	43	N	-t	1.3866	0.3633	-0.7347	182.1	-	-	25N	120W
-0056	Jun 24	23:31:30	11094	281	-25424	48	N	-a	-1.0518	0.9098	-0.0538	239.7	-	-	25S	53E
-0056	Jul 24	07:06:33	11093	281	-25423	86	N	a-	1.4762	0.1249	-0.8265	94.0	-	-	19S	60W
-0056	Dec 18	13:55:20	11089	281	-25418	53	P	-h	0.6599	1.6739	0.6207	322.2	169.1	-	24N	162W
-0055	Jun 14	11:29:39	11084	281	-25412	58	T	-a	-0.3167	2.2843	1.2695	342.4	214.4	75.8	24S	127W
-0055	Dec 07	23:56:43	11079	281	-25406	63	T-	p-	-0.0572	2.7519	1.7541	330.4	214.8	98.7	23N	46E
-0054	Jun 03	16:16:57	11074	281	-25400	68	P	t-	0.4681	2.0294	0.9692	354.0	207.2	-	22S	160E
-0054	Nov 27	14:49:56	11069	281	-25394	73	P	a-	-0.7167	1.5285	0.5570	283.5	149.8	-	20N	178W
-0053	May 23	16:56:22	11064	281	-25388	78	N	t-	1.2275	0.6382	-0.4262	233.6	-	-	19S	150E
-0053	Oct 18	17:58:35	11059	280	-25383	45	N	-a	1.3492	0.3888	-0.6239	170.4	-	-	10N	133E
-0053	Nov 17	06:02:38	11058	280	-25382	83	N	a-	-1.3933	0.2970	-0.6941	145.7	-	-	17N	47W
-0052	Apr 12	09:53:22	11054	280	-25377	50	P	-t	-0.7698	1.4458	0.4454	296.7	144.1	-	8S	102W
-0052	Oct 07	01:32:19	11049	280	-25371	55	P	-h	0.6983	1.6107	0.5435	326.2	163.5	-	5N	20E

-0051 Apr 01	23:38:36	11044	280	-25365	60	T-	pp	-0.0008	2.8350	1.8776	321.9	213.2	99.7	4S	52E
-0051 Sep 26	02:27:29	11039	280	-25359	65	T+	pp	0.0013	2.9035	1.8085	378.0	235.5	105.5	0N	7E
-0050 Mar 22	16:24:25	11034	280	-25353	70	P	a-	0.7142	1.5235	0.5713	282.7	151.9	-	1N	162E
-0050 Sep 15	02:39:07	11029	280	-25347	75	P	t-	-0.7031	1.6039	0.5326	329.5	163.8	-	5S	5E
-0049 Feb 10	19:54:42	11025	279	-25342	42	N	-a	-1.2499	0.5786	-0.4491	209.2	-	-	14N	111E
-0049 Mar 12	07:30:49	11024	279	-25341	80	N	a-	1.4660	0.1632	-0.8269	111.4	-	-	6N	63W
-0049 Aug 05	22:27:46	11020	279	-25336	47	N	-a	1.2915	0.4774	-0.5011	183.3	-	-	17S	70E
-0049 Sep 04	08:56:07	11019	279	-25335	85	N	a-	-1.3776	0.3374	-0.6766	161.6	-	-	10S	88W
-0048 Jan 31	00:52:59	11014	279	-25330	52	P	-t	-0.5768	1.8413	0.7585	345.9	189.2	-	18N	37E
-0048 Jul 25	14:16:16	11009	279	-25324	57	P	-a	0.5398	1.8405	0.8942	297.7	180.0	-	20S	168W
-0047 Jan 19	00:26:38	11004	279	-25318	62	T+	pp	0.1166	2.6939	1.5952	376.9	233.5	101.4	21N	43E
-0047 Jul 15	07:04:59	10999	279	-25312	67	T-	p-	-0.1888	2.4903	1.5323	321.0	210.5	92.1	23S	60W
-0046 Jan 08	01:55:39	10994	279	-25306	72	P	a-	0.8002	1.4218	0.3581	310.8	135.6	-	23N	20E
-0046 Jul 04	20:15:28	10989	278	-25300	77	P	t-	-0.9791	1.0639	0.0593	267.9	56.0	-	24S	102E
-0046 Nov 28	22:29:45	10985	278	-25295	44	N	-a	-1.3025	0.4610	-0.5248	177.6	-	-	20N	67E
-0046 Dec 28	10:25:23	10984	278	-25294	82	N	a-	1.4334	0.2320	-0.7759	132.4	-	-	25N	109W
-0045 May 25	12:14:15	10980	278	-25289	49	Nx	-t	1.0056	1.0466	-0.0201	287.9	-	-	20S	139W
-0045 Nov 18	13:57:21	10975	278	-25283	54	P	-a	-0.6350	1.6788	0.7066	292.0	164.9	-	18N	166W
-0044 May 13	13:00:27	10970	278	-25277	59	T+	pp	0.2396	2.4471	1.3901	364.6	227.0	89.9	18S	151W
-0044 Nov 07	04:26:11	10965	278	-25271	64	T+	pp	0.0331	2.7991	1.7955	333.5	216.4	99.6	16N	24W
-0043 May 02	18:39:43	10960	278	-25265	69	P	a-	-0.5345	1.8820	0.8727	325.5	190.3	-	15S	124E
-0043 Oct 27	13:29:59	10955	277	-25259	74	P	t-	0.7621	1.4895	0.4303	313.8	146.3	-	13N	160W
-0042 Mar 23	23:34:26	10951	277	-25254	41	N	-a	1.2958	0.4566	-0.4962	173.8	-	-	1N	55E
-0042 Apr 22	07:22:44	10950	277	-25253	79	N	a-	-1.2472	0.5499	-0.4110	192.1	-	-	12S	66W
-0042 Sep 16	21:13:48	10945	277	-25248	46	N	-t	-1.5099	0.1338	-0.9577	113.3	-	-	5S	87E
-0042 Oct 16	15:27:23	10945	277	-25247	84	N	t-	1.4901	0.1732	-0.9244	128.3	-	-	9N	170E
-0041 Mar 13	16:15:46	10940	277	-25242	51	P	-a	0.5998	1.7377	0.7768	296.5	172.3	-	5N	165E
-0041 Sep 05	22:43:14	10935	277	-25236	56	P	-t	-0.7681	1.4762	0.4216	315.4	146.4	-	9S	65E
-0040 Mar 02	06:00:18	10930	277	-25230	61	T-	pp	-0.1224	2.6376	1.6291	340.0	219.2	98.1	8N	41W
-0040 Aug 25	07:14:05	10925	277	-25224	66	T-	pp	-0.0011	2.8536	1.8583	336.0	218.9	101.2	12S	63W
-0039 Feb 19	12:55:09	10920	276	-25218	71	P	t-	-0.8880	1.2624	0.1955	302.6	104.1	-	11N	144W
-0039 Aug 14	21:59:58	10915	276	-25212	76	P	a-	0.7147	1.5236	0.5693	283.3	151.9	-	15S	76E
-0038 Jan 09	19:05:47	10911	276	-25207	43	N	-t	1.3969	0.3425	-0.7520	176.8	-	-	24N	122E
-0038 Jul 06	06:50:57	10906	276	-25201	48	N	-a	-1.1256	0.7764	-0.1914	225.4	-	-	24S	57W
-0038 Aug 04	14:47:32	10905	276	-25200	86	N	a-	1.4213	0.2277	-0.7277	126.0	-	-	17S	176W
-0038 Dec 29	22:16:50	10901	276	-25195	53	P	-h	0.6630	1.6660	0.6172	320.5	168.3	-	24N	73E
-0037 Jun 25	18:21:21	10896	276	-25189	58	T	-h	-0.3971	2.1391	1.1197	339.8	208.1	53.2	24S	129E
-0037 Dec 19	08:41:38	10891	276	-25183	63	T-	p-	-0.0555	2.7534	1.7586	329.4	214.4	98.6	24N	85W
-0036 Jun 13	22:41:02	10886	275	-25177	68	T	t-	0.3815	2.1895	1.1272	360.6	217.1	56.7	23S	64E
-0036 Dec 07	23:44:30	10881	275	-25171	73	P	a-	-0.7163	1.5293	0.5579	283.5	149.9	-	22N	48E

-0035	Jun 02	23:17:53	10876	275	-25165	78	N	t-	1.1392	0.7992	-0.2634	256.8	-	-	21S	54E
-0035	Oct 29	02:25:52	10872	275	-25160	45	N	-a	1.3618	0.3683	-0.6495	166.8	-	-	14N	5E
-0035	Nov 27	14:49:49	10871	275	-25159	83	N	a-	-1.3960	0.2935	-0.7004	145.3	-	-	20N	179W
-0034	Apr 23	17:06:36	10867	275	-25154	50	P	-h	-0.8346	1.3241	0.3292	286.6	125.7	-	12S	148E
-0034	Oct 18	09:29:05	10862	275	-25148	55	P	-h	0.7173	1.5786	0.5060	325.5	159.1	-	10N	100W
-0033	Apr 13	07:17:54	10857	275	-25142	60	T-	pp	-0.0606	2.7232	1.7698	320.7	212.6	99.0	8S	64W
-0033	Oct 07	10:01:37	10852	274	-25136	65	T+	pp	0.0287	2.8550	1.7565	378.4	235.4	105.1	5N	108W
-0032	Apr 02	00:14:27	10847	274	-25130	70	P	a-	0.6623	1.6179	0.6673	288.2	161.9	-	3S	43E
-0032	Sep 25	10:14:46	10842	274	-25124	75	P	t-	-0.6684	1.6680	0.5958	332.8	171.1	-	1S	110W
-0031	Feb 21	03:49:31	10838	274	-25119	42	N	-a	-1.2843	0.5155	-0.5123	199.3	-	-	10N	8W
-0031	Mar 22	15:14:16	10837	274	-25118	80	N	a-	1.4240	0.2403	-0.7499	134.6	-	-	2N	179E
-0031	Aug 16	06:09:06	10833	274	-25113	47	N	-a	1.3391	0.3901	-0.5883	166.6	-	-	14S	47W
-0031	Sep 14	16:49:13	10832	274	-25112	85	N	a-	-1.3384	0.4093	-0.6046	176.3	-	-	6S	152E
-0030	Feb 10	08:30:54	10828	274	-25107	52	P	-t	-0.6067	1.7859	0.7043	343.6	184.4	-	15N	78W
-0030	Aug 05	22:01:27	10823	274	-25101	57	P	-a	0.5971	1.7363	0.7880	293.1	171.9	-	17S	75E
-0029	Jan 30	08:06:40	10818	273	-25095	62	T+	pp	0.0935	2.7344	1.6394	376.5	234.0	102.9	19N	72W
-0029	Jul 26	14:37:50	10813	273	-25089	67	T-	pp	-0.1255	2.6086	1.6463	323.5	212.9	96.7	21S	174W
-0028	Jan 19	10:00:50	10808	273	-25083	72	P	a-	0.7843	1.4485	0.3901	311.4	140.4	-	22N	101W
-0028	Jul 15	03:20:21	10803	273	-25077	77	P	t-	-0.9113	1.1909	0.1810	280.9	96.5	-	23S	5W
-0028	Dec 09	07:19:20	10798	273	-25072	44	N	-a	-1.3013	0.4622	-0.5218	177.4	-	-	22N	65W
-0027	Jan 07	18:59:41	10798	273	-25071	82	N	a-	1.4229	0.2490	-0.7545	136.4	-	-	24N	123E
-0027	Jun 04	18:33:29	10793	273	-25066	49	N	-t	1.0948	0.8832	-0.1843	269.2	-	-	21S	125E
-0027	Nov 28	22:50:21	10788	273	-25060	54	P	-a	-0.6373	1.6752	0.7020	292.1	164.5	-	21N	61E
-0026	May 24	19:28:35	10783	272	-25054	59	T	pt	0.3255	2.2879	1.2339	359.8	220.6	73.7	20S	111E
-0026	Nov 18	13:06:19	10778	272	-25048	64	T+	pp	0.0301	2.8065	1.7992	334.8	216.9	99.7	19N	155W
-0025	May 14	01:38:16	10774	272	-25042	69	T	a-	-0.4556	2.0242	1.0198	329.7	199.7	22.0	18S	18E
-0025	Nov 07	21:44:23	10769	272	-25036	74	P	t-	0.7567	1.5017	0.4379	315.9	147.8	-	17N	75E
-0024	Apr 03	07:21:41	10764	272	-25031	41	N	-a	1.3484	0.3583	-0.5910	155.1	-	-	3S	64W
-0024	May 02	14:48:20	10764	272	-25030	79	N	a-	-1.1764	0.6777	-0.2792	209.9	-	-	16S	179W
-0024	Sep 27	04:39:59	10759	272	-25025	46	N	-t	-1.5426	0.0751	-1.0191	85.3	-	-	0S	26W
-0024	Oct 26	23:16:53	10759	272	-25024	84	N	t-	1.4755	0.2017	-0.8994	138.3	-	-	13N	52E
-0023	Mar 24	00:09:07	10754	272	-25019	51	P	-a	0.6504	1.6443	0.6846	292.2	164.6	-	0N	45E
-0023	Sep 16	06:18:35	10750	272	-25013	56	P	-t	-0.8045	1.4097	0.3547	309.7	135.3	-	4S	51W
-0022	Mar 13	13:43:25	10745	271	-25007	61	T-	pp	-0.0773	2.7204	1.7119	341.7	220.9	100.6	4N	158W
-0022	Sep 05	15:05:56	10740	271	-25001	66	T-	pp	-0.0434	2.7761	1.7807	334.9	218.0	100.5	8S	178E
-0021	Mar 02	20:21:59	10735	271	-24995	71	P	t-	-0.8487	1.3340	0.2680	309.3	120.9	-	7N	103E
-0021	Aug 26	05:57:02	10730	271	-24989	76	P	a-	0.6662	1.6135	0.6575	288.1	160.8	-	11S	45W
-0020	Jan 21	02:56:31	10725	271	-24984	43	N	-t	1.4112	0.3143	-0.7761	169.3	-	-	22N	5E
-0020	Feb 19	20:49:04	10725	271	-24983	81	Nb	t-	-1.5751	0.0140	-1.0772	37.0	-	-	11N	96E
-0020	Jul 16	14:13:47	10721	271	-24978	48	N	-a	-1.1958	0.6500	-0.3223	209.7	-	-	23S	168W

-0020 Aug 14	22:34:24	10720	271	-24977	86	N	a-	1.3715	0.3212	-0.6385	148.8	-	-	14S	66E
-0019 Jan 09	06:35:30	10716	271	-24972	53	P	-h	0.6691	1.6523	0.6085	318.3	166.8	-	23N	51W
-0019 Jul 06	01:13:23	10711	270	-24966	58	P	-h	-0.4761	1.9966	0.9724	336.3	200.0	-	24S	26E
-0019 Dec 29	17:24:21	10706	270	-24960	63	T-	p-	-0.0516	2.7590	1.7676	328.4	214.1	98.7	23N	145E
-0018 Jun 25	05:06:28	10701	270	-24954	68	T	pp	0.2961	2.3473	1.2824	365.9	224.6	80.1	23S	33W
-0018 Dec 19	08:36:32	10696	270	-24948	73	P	a-	-0.7138	1.5335	0.5628	283.7	150.4	-	23N	84W
-0017 Jun 14	05:42:44	10691	270	-24942	78	N	t-	1.0526	0.9575	-0.1037	276.0	-	-	22S	42W
-0017 Nov 09	10:56:53	10687	270	-24937	45	N	-a	1.3711	0.3536	-0.6688	164.3	-	-	18N	123W
-0017 Dec 08	23:36:11	10686	270	-24936	83	N	a-	-1.3984	0.2902	-0.7058	144.9	-	-	21N	49E
-0016 May 04	00:16:57	10682	270	-24931	50	P	-h	-0.9024	1.1971	0.2073	275.2	101.2	-	16S	39E
-0016 Oct 28	17:31:00	10677	269	-24925	55	P	-h	0.7313	1.5553	0.4779	325.2	155.7	-	14N	138E
-0015 Apr 23	14:51:21	10672	269	-24919	60	T-	pp	-0.1258	2.6017	1.6519	319.0	211.1	96.3	12S	179W
-0015 Oct 17	17:44:18	10667	269	-24913	65	T+	pp	0.0488	2.8196	1.7183	378.7	235.2	104.6	9N	135E
-0014 Apr 13	07:54:44	10662	269	-24907	70	P	a-	0.6027	1.7266	0.7771	294.0	171.8	-	7S	74W
-0014 Oct 06	18:01:57	10657	269	-24901	75	P	t-	-0.6425	1.7158	0.6431	334.8	175.9	-	4N	132E
-0013 Mar 04	11:32:56	10653	269	-24896	42	N	-a	-1.3268	0.4376	-0.5903	185.6	-	-	6N	126W
-0013 Apr 02	22:47:25	10652	269	-24895	80	N	a-	1.3746	0.3311	-0.6596	157.2	-	-	3S	64E
-0013 Aug 27	13:59:17	10648	269	-24890	47	N	-a	1.3801	0.3150	-0.6637	150.3	-	-	10S	166W
-0013 Sep 26	00:52:03	10647	269	-24889	85	N	a-	-1.3063	0.4681	-0.5456	186.9	-	-	1S	30E
-0012 Feb 21	15:59:25	10643	268	-24884	52	P	-t	-0.6436	1.7176	0.6374	340.3	177.7	-	11N	169E
-0012 Aug 16	05:52:57	10638	268	-24878	57	P	-a	0.6491	1.6421	0.6914	288.5	163.6	-	14S	43W
-0011 Feb 09	15:39:57	10633	268	-24872	62	T+	pp	0.0644	2.7854	1.6948	375.9	234.4	104.2	15N	174E
-0011 Aug 05	22:14:02	10628	268	-24866	67	T-	pp	-0.0657	2.7208	1.7536	325.5	214.4	99.3	18S	72E
-0010 Jan 29	18:01:40	10623	268	-24860	72	P	a-	0.7638	1.4830	0.4304	312.5	146.2	-	19N	138E
-0010 Jul 26	10:28:06	10618	268	-24854	77	P	t-	-0.8467	1.3125	0.2967	292.4	122.0	-	21S	112W
-0010 Dec 20	16:08:12	10614	268	-24849	44	N	-a	-1.3012	0.4613	-0.5203	176.8	-	-	22N	163E
-0009 Jan 19	03:29:35	10614	268	-24848	82	N	a-	1.4085	0.2730	-0.7256	142.0	-	-	22N	4W
-0009 Jun 16	00:54:07	10609	267	-24843	49	N	-t	1.1821	0.7236	-0.3450	247.9	-	-	22S	30E
-0009 Dec 10	07:43:49	10604	267	-24837	54	P	-a	-0.6387	1.6729	0.6990	292.2	164.4	-	22N	72W
-0008 Jun 04	01:58:00	10600	267	-24831	59	T	-t	0.4110	2.1297	1.0785	353.8	212.3	44.8	22S	13E
-0008 Nov 28	21:47:16	10595	267	-24825	64	T+	pp	0.0284	2.8112	1.8006	336.0	217.4	99.9	21N	75E
-0007 May 24	08:36:52	10590	267	-24819	69	T	a-	-0.3759	2.1684	1.1683	332.9	207.1	61.2	21S	87W
-0007 Nov 18	06:00:36	10585	267	-24813	74	P	t-	0.7531	1.5103	0.4425	317.6	148.9	-	20N	49W
-0006 Apr 14	15:02:18	10581	267	-24808	41	N	-a	1.4067	0.2497	-0.6965	130.6	-	-	7S	179E
-0006 May 13	22:11:14	10580	267	-24807	79	N	a-	-1.1028	0.8112	-0.1424	225.9	-	-	19S	69E
-0006 Oct 08	12:15:50	10576	267	-24802	46	N	-t	-1.5679	0.0300	-1.0666	54.1	-	-	4N	142W
-0006 Nov 07	07:11:35	10575	266	-24801	84	N	t-	1.4650	0.2223	-0.8814	145.2	-	-	17N	68W
-0005 Apr 04	07:54:23	10571	266	-24796	51	P	-a	0.7075	1.5393	0.5802	286.9	154.4	-	4S	73W
-0005 Sep 27	14:03:48	10566	266	-24790	56	P	-t	-0.8335	1.3564	0.3012	304.8	125.3	-	0S	168W
-0004 Mar 23	21:16:54	10561	266	-24784	61	T-	pp	-0.0249	2.8167	1.8078	343.3	222.2	102.2	0S	87E



-0004 Sep 15	23:07:28	10556	266	-24778	66	T-	pp	-0.0783	2.7120	1.7165	333.6	216.9	99.2	4S	56E
-0003 Mar 13	03:36:49	10551	266	-24772	71	P	t-	-0.8002	1.4225	0.3574	316.8	138.1	-	3N	8W
-0003 Sep 05	14:02:45	10546	266	-24766	76	P	a-	0.6246	1.6907	0.7326	292.0	167.5	-	7S	167W
-0002 Jan 31	10:39:33	10542	266	-24761	43	N	-t	1.4319	0.2739	-0.8117	158.2	-	-	19N	111W
-0002 Mar 02	04:02:00	10542	266	-24760	81	N	t-	-1.5313	0.0924	-0.9949	94.4	-	-	7N	14W
-0002 Jul 27	21:40:49	10537	265	-24755	48	N	-a	-1.2617	0.5315	-0.4459	192.6	-	-	21S	80E
-0002 Aug 26	06:28:54	10537	265	-24754	86	N	a-	1.3282	0.4030	-0.5613	165.8	-	-	10S	54W
-0001 Jan 20	14:48:13	10533	265	-24749	53	P	-h	0.6810	1.6278	0.5895	315.5	164.2	-	21N	174W
-0001 Jul 17	08:08:54	10528	265	-24743	58	P	-h	-0.5513	1.8614	0.8318	332.2	190.3	-	23S	78W
0000 Jan 10	02:04:22	10523	265	-24737	63	T-	p-	-0.0446	2.7697	1.7823	327.3	213.8	98.8	22N	16E
0000 Jul 05	11:32:48	10518	265	-24731	68	T+	pp	0.2118	2.5035	1.4358	370.0	230.1	93.8	23S	129W
0000 Dec 29	17:27:29	10513	265	-24725	73	P	a-	-0.7105	1.5390	0.5693	284.0	151.2	-	23N	143E